



COLT SINGLE-ACTION REVOLVERS

MARTIN PEGLER



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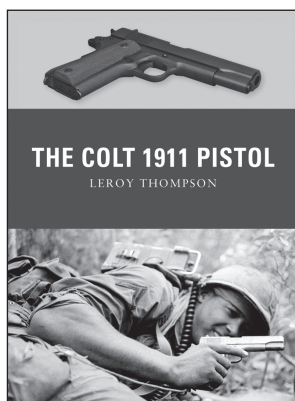
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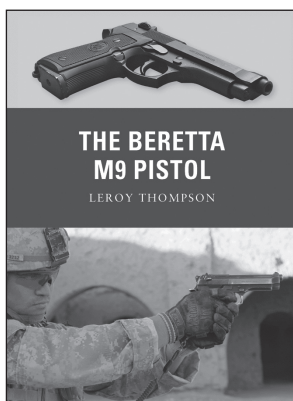
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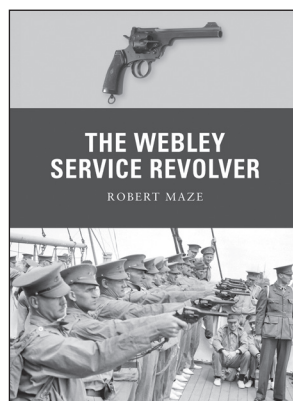
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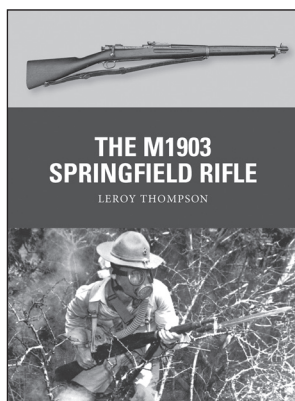
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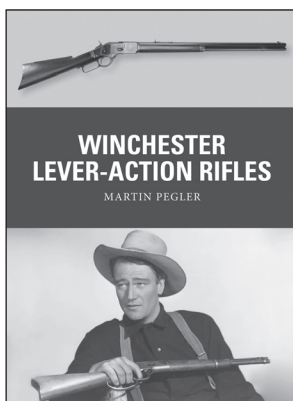
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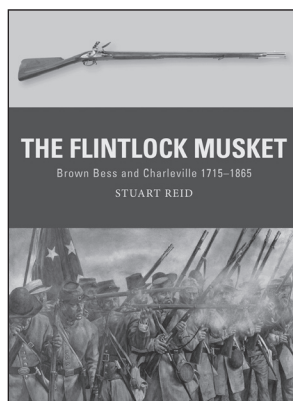
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My grateful thanks to Dr. Robert Maze and Dr. Laurie Landau for providing photographs of some of their fine Colt collection and associated ammunition. Also to Roy Jinks, Smith & Wesson historian, for permission to quote from his book, and to Peter Smithurst for his assistance. As always, this work is entirely my responsibility and any technical errors are also mine.

Artist's note

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Editor's note

In this book linear, weight, and volume measurements are given in US customary units of measurement (yards, feet, inches, pounds, ounces, grains). The following data will help when converting between US customary and metric measurements:

1yd = 91.44cm
1ft = 30.48cm
1in = 2.54cm
1lb = 0.45kg
1oz = 28.35g
1 grain = 0.002oz
1 grain = 0.064g

Front cover, above: An Army-issue Colt Single Action Army, in .45 caliber with 7½in barrel. These were the revolvers that were used in the bulk of the fighting during the turbulent period of the Indian Wars. (NRA Museums, NRAMuseums.com)

Front cover, below: Paul Newman (left) and Robert Redford in a scene from the movie *Butch Cassidy and the Sundance Kid*. (Bettmann)

Title-page image: Purportedly an image of Jesse and Frank James, with Jesse (at left) holding a Colt Model 1860 Army. Frank, on the right, is holding a Remington Model 1858 Army. (Library of Congress)

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INTRODUCTION

Colt. Even to people with little interest in or knowledge of firearms, the name has a resonance that creates a powerful mental image. Normally it is that of the archetypal cowboy, toting a six-shooter; an indication of just how successful Samuel Colt's products were in defining an era. More than any other, the Colt revolver is the most easily identifiable and iconic handgun in the world. Since its introduction in 1847, it has remained in production – with one or two slight hiatuses – up to the present day, and it has been copied by countless other manufacturers.

Samuel Colt was born in Hartford, Connecticut on July 19, 1814, into a world that had changed little since the first English settlers landed at Cape Henry on April 29, 1607. His father was a dyemaker, with a particularly thorough knowledge of chemical processes. Young Samuel showed some hint of his inherited scientific curiosity at a very early age, making his own pyrotechnics and taking firearms apart to see how they functioned. He developed a curious fascination with nitrous oxide and became something of an expert on the subject, which would stand him in good stead in the future. He also loved manufacturing explosives and began to construct submarine mines, successfully blowing up a raft in a local pond at the age of 15. When an experiment with a torpedo went badly wrong, however, he was forced to leave his school, the Amherst Academy, under something of a cloud. This did not deter him in the least, however, and his interest in firearms continued unabated. He joined a trading ship bound for Calcutta at the age of 16 and it was from this time, he later acknowledged, that his initial idea for a revolving-cylinder firearm originated.

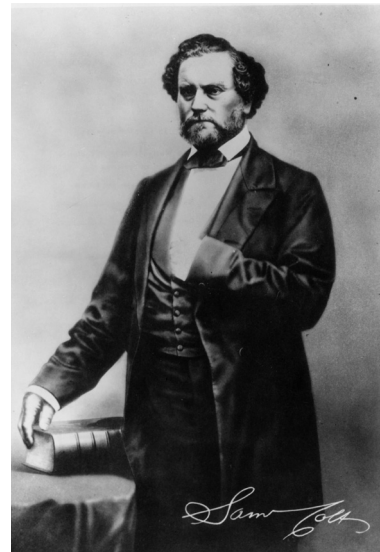
Although Colt's later design was heralded at the time as a major breakthrough, as is so often the case his revolvers were actually the culmination of decades – one could reasonably say centuries – of firearms development by other men that eventually enabled Colt to piece together the mechanical jigsaw which culminated in a workable multi-shot

handgun. There had been earlier attempts, harking back to the 18th century, and even the most dedicated Colt enthusiast will admit that the original percussion revolvers produced by Colt were not the strongest, most reliable, or most accurate of handguns. Colt himself acknowledged the shortcomings of the earliest designs, and continued to refine them throughout his working life.

Probably no other manufacturer, firearms or otherwise, has had such a long-term impact on the modern world as Samuel Colt. Not for nothing was it said: “It wasn’t God or the declaration of Independence that made all men free and equal, it was Colonel Samuel Colt.” If he was not the finest firearms designer America was ever to produce, there was one thing that Samuel Colt excelled in: exceptional marketing skills, in an era when the term had not even been coined. Nor could it be claimed that the Colt factory pioneered totally new methods of mass-production; it utilized the same techniques – the “American system” of manufacture – that companies such as Robbins & Lawrence and Eli Whitney had developed prior to the American Civil War. They used standardized machine-made components that were truly interchangeable and once the Colt factory had been established at Hartford, Connecticut, these same production methods were employed, utilizing improved and refined forms of fabricating parts to streamline the production process and improve profitability. Such was the demand for Colt’s revolvers from Europe that in 1852 he established a factory at Pimlico in London.

During the Civil War years (1861–65), spectacular advances had been made in firearms design, particularly with regard to ammunition. If Colt suffered from one major problem in the post-bellum years, it was the company’s inability to bypass the Rollin White patent, which prevented Colt from converting its percussion guns to cartridge-loading. The Rollin White patent covered the loading of revolvers by means of a cartridge from the rear, and it held up the future development of Colt’s cartridge revolvers, permitting the company’s arch-rival, Smith & Wesson, to establish itself as a more innovative handgun manufacturer, introducing self-ejecting cylinders and double-action mechanisms. It could be argued that the Colt company never quite recovered from this, even after the patent expired and it was able to manufacture its own range of cartridge revolvers.

It is a curious anomaly that the actual working lifespan of all these single-action revolvers encompassed little more than 50 years, by which time a new generation of more sophisticated revolvers had appeared. From the late 1830s, when the first Colt Paterson revolvers emerged, men clamored for the Colt, which was carried by miners in the goldfields of California, soldiers of both sides during the savage battles of the American Civil War, and by trappers, traders, buffalo hunters, renegades, and robbers. Tens of thousands of Colts were carried by pioneers who began the long trek into the uncharted land west of the Mississippi River as migration increased dramatically after the end of the war. With the



Samuel Colt, 1814–62. (Photo by MPI/Getty Images)

growing conflict between settlers and the Native American tribes, the US Cavalry, placed in the forefront of the disputed territories, were issued the Colt as their standard service revolver despite its by then rather questionable practicality. It was a sign of the high regard in which Colt's handguns were held that it was chosen over stronger, faster-loading revolvers that were by then being produced by companies such as Remington and Smith & Wesson.

So brilliant was Colt's advertising that today the popularity of the brand remains undiminished. In part this can be attributed to its unparalleled use in movies and television series, where the viewer could be forgiven for believing that no other form of handgun existed in early America. (The Winchester, similarly, appeared to be the only rifle.) Above all else, the Colt has become synonymous with the cowboy era, which in itself lasted for a remarkably short period of time. Although it was Mexican *vaqueros* who worked the Western plains from the 18th century, the American cowboy's lifespan began only with the arrival of the huge cattle herds to feed the burgeoning populations in the West in the 1840s; and they died out with the introduction of railroads and the fencing of the ranges in the 1880s in order to keep cattle away from the ever-expanding farms. It is not, of course, coincidental that this was also the main era during which the handgun and rifle were put to their greatest use and around which hundreds of movies and television shows were based. To understand how Samuel Colt and his ideas were to affect the future of firearms design so radically, however, we need to go back some 200 years.

A typical Colt Single Action Army "Peacemaker" in .44-40 caliber, loved by the movie industry to the exclusion of almost every other type of revolver. (© Royal Armouries XII.3698)





DEVELOPMENT

The evolution of the revolver

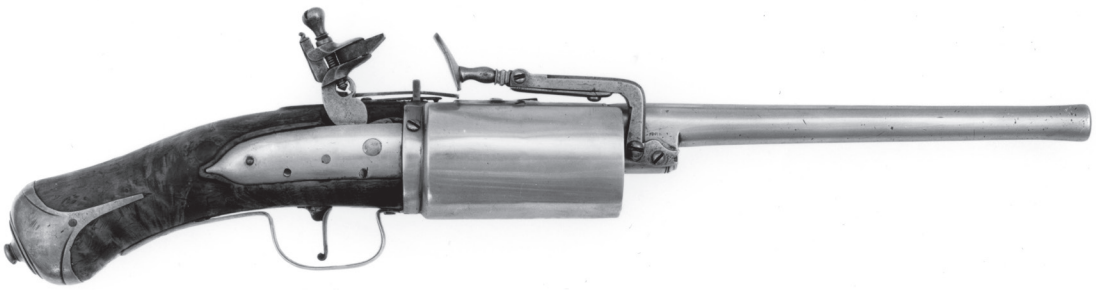
PRECURSORS

Single-shot firearms, no matter how sophisticated, suffer from one inescapable shortcoming. Regardless of how perilous the situation, in order to reload his weapon a shooter must become defenseless for a period of time. To possess a firearm that had a cylinder or magazine which contained multiple charges was a goal toward which many gunsmiths and engineers had striven tirelessly. There were a few partial successes, of course, but aside from the limitations of their manual mechanisms the main problem exhibited by such guns was their predisposition for multiple ignition, as the flash from one charge ignited the others.

It was not until the 18th century that an element of mechanical sophistication began to creep into the designs of prototypical revolvers. Two examples stand out in particular, one being a beautifully made German flintlock sporting gun of 1732 which has a steel or frizzen that closes off each preprimed pan until it is in line with the barrel for firing, although it still required manual turning prior to each shot. The other example is a compact revolving flintlock pistol manufactured by Artemus Wheeler of Concord, Massachusetts, in 1818, and patented the same year in Great Britain by his friend Elisha Collier (1788–1856).

A German revolving wheel-lock pistol (shown here) and carbine, both datable to about 1610, exist in the collection of the UK's Royal Armouries. These weapons were mechanically unsophisticated, requiring the cylinder to be rotated manually and the priming charge loaded prior to each shot, the chamber then being locked in position in alignment with the barrel. Wheel-locks were, by their nature, capricious things when it came to ignition, although matters improved somewhat with the more general introduction of the flintlock mechanism around the 1620s. Samuel Colt examined the pistol when he visited the Tower of London in 1849, and used it to illustrate his lecture to the Institute of Civil Engineers in London in 1851. (© Royal Armouries XII.1078)





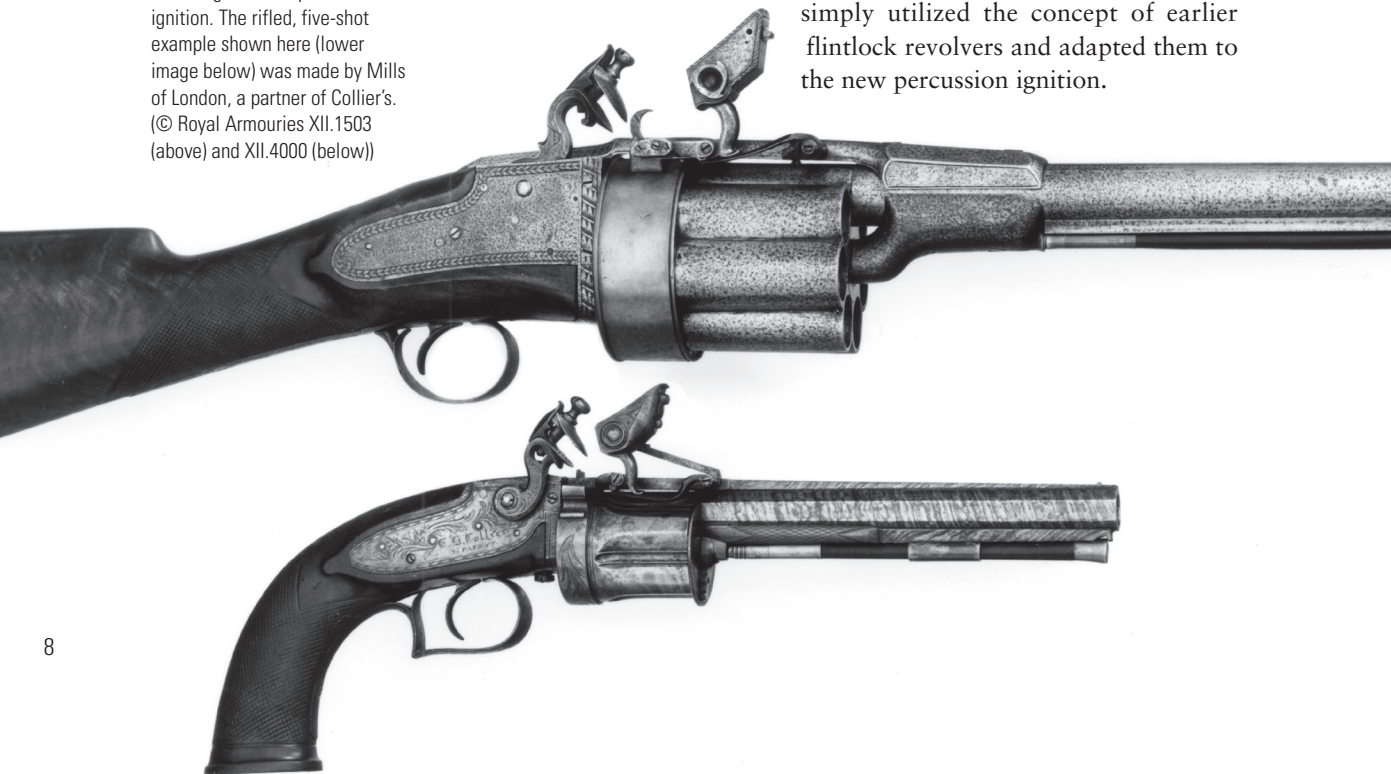
This English snaphaunce revolver, c.1670, bears all the hallmarks of later revolvers. It was also examined by Colt during his Tower of London visit in 1849. (© Royal Armouries XII.1780)

Artemus Wheeler's revolving flintlock gun (upper image below) had seven chambers, but also a pawl mechanism that automatically rotated the cylinder. It was not flawless, however, and rotating the cylinder by means of cocking the hammer shows that at times it did not align itself perfectly with the barrel. An existing example in the Royal Armouries has had the pawl spring disconnected for precisely this reason. Elisha Collier greatly improved on Wheeler's revolving flintlock pistol design and from 1820 began to use percussion ignition. The rifled, five-shot example shown here (lower image below) was made by Mills of London, a partner of Collier's. (© Royal Armouries XII.1503 (above) and XII.4000 (below))

It was the invention of the percussion cap or caplock ignition in the 1820s that finally enabled gunmakers to begin producing true revolvers. With the problems of unreliable ignition finally resolved, gunsmiths initiated production with renewed enthusiasm and in 1825, not long after Samuel Colt was born, Elisha Collier designed a five-chambered percussion revolver that was both self-aligning and rifled. True, it was a cumbersome and muzzle-heavy weapon, but Collier had overcome most of the technical stumbling-blocks that had hitherto constrained other designs.

At some point in the early 1830s a transitional revolver, known as the pepperbox, began to make an appearance in both the United States and Europe. It was, in effect, a more practical version of Collier's design, comprising of an elongated cylinder with between three and a dozen barrels, which rotated around a central arbor or axis pin. Percussion ignited, the pepperbox was relatively effective, although only over very short ranges (it was said at the time that even a point-blank shot could miss the target) as the centrally mounted hammer effectively blocked the line of sight for aiming. It did, however, provide a level of firepower that had hitherto been impossible to attain any other way. Samuel Colt later claimed that the pepperbox design was his idea, but as the type had appeared across Europe and America at much the same time, it is more

likely that several manufacturers had simply utilized the concept of earlier flintlock revolvers and adapted them to the new percussion ignition.



COLT'S FIRST EXPERIMENTS

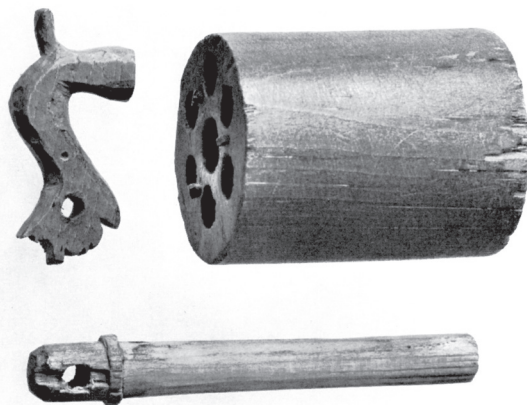
This early roll of honor of revolver experiments is far more relevant to the Colt story than it may at first appear. Samuel had gone to sea in 1830 on board the sailing ship *Corlo*, and on the long nights when he was in his cabin he began to whittle a piece of wood into a long bored-out cylinder with five chambers and a simple hammer. He placed small steel nails in the rear face of the cylinder, to act as locking pins when it rotated, and fabricated an axis pin. The following year he took his experimental models to a gunmaker in East Side, Hartford named Anson Chase, who was to become pivotal in assisting Colt with the manufacture of his early designs. Chase and his partner, a Mr. Rowe, produced drawings that would enable them to build a prototype of Colt's design.

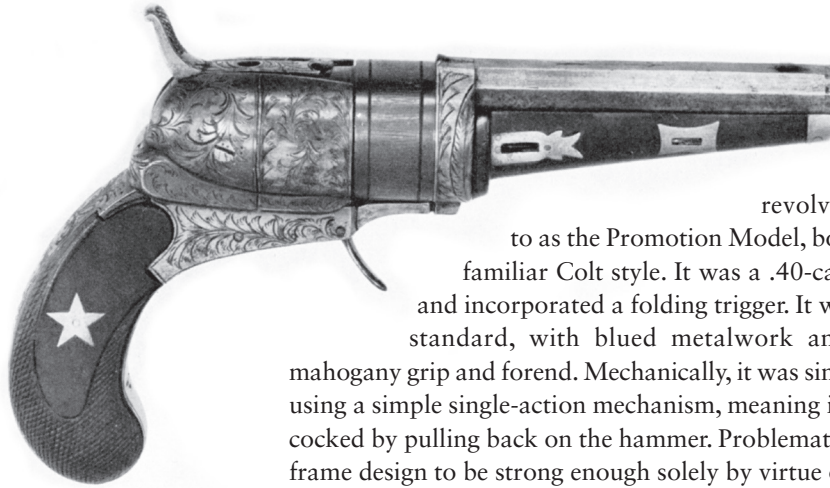
The first percussion revolver was not quite the unqualified success that Colt had hoped for – it blew up as he was firing it! There were several contributory factors to this, the main one being that the weapon required hand-aligning and if not correctly positioned it was inherently dangerous. Secondly, Colt had not thought to recess or place partitions between the nipples and so it chain-fired – always a problem with percussion revolvers, and one that is still extant today in modern replicas.

The next version was much improved, with the major problems resolved. The revolver now had a .32-caliber, five-shot cylinder that automatically revolved as the hammer was pulled back. In fact, mechanically rotating a cylinder was never a difficult feat to achieve; the problem was in finding a method by which it could be solidly locked in place, perfectly in line with the barrel. To prevent the cylinder from over-rotating, a rectangular stop – rather confusingly called the bolt – was placed in the right side of the lower frame. On cocking, this lug located in slots machined into the cylinder, thus locking the cylinder firmly in place. This time, the nipples were also shielded.

Clearly, more work was required, but as with so many inventors before him, Colt suffered from an acute shortage of money. He was, after all, still only 18 years old and his father was unable to fund all this experimental work. So with typical élan, Colt decided to embark on a tour of the United States and Canada, not to publicize his revolver, but to lecture on the properties of nitrous oxide. If this seems a somewhat obscure topic, it should be remembered that few people even knew what a gas was, and his popular demonstrations of the effects of laughing gas on hapless volunteers from the audience ensured that his lectures were both well attended and profitable. They also underscored a trait that Colt realized he possessed but which few other gun-designers could claim: he was a natural showman. The financial success of the lecture tour enabled Colt to continue to work on refining his revolver design and in 1832 two prototypes, a revolver and a rifle, were sent to the Patent Office in Washington, DC, which granted him patents on February 25, 1836. Shrewdly,

The wooden patterns made by Samuel Colt during 1830–32. There was later some controversy about exactly when Colt had produced these models, some competitors alleging they were later than he claimed, but Anson Chase, who later gave court testimony on Colt's behalf, stated under oath: "When Mr Colt came to see me in Hartford in 1831, he brought something for a sample to give an idea of what he wanted; it was a wooden cylinder with holes bored in it" (quoted in Wilson 1964: 4). (Colt Firearms Collection, Wadsworth Atheneum)





The Pearson promotional revolver. Although beautifully made, it proved to be too complex for mass-production. (Colt Firearms Collection, Wadsworth Atheneum)

he also took out British and European patents.

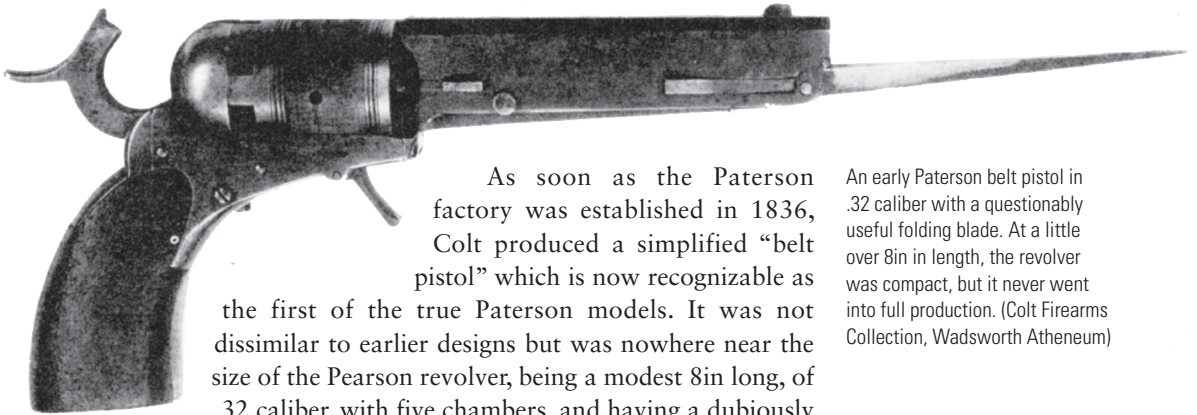
The second experimental revolver, sometimes referred to as the Promotion Model, bore the hallmarks of the familiar Colt style. It was a .40-caliber five-shot weapon and incorporated a folding trigger. It was made to a very high standard, with blued metalwork and silver inlay, and a mahogany grip and forend. Mechanically, it was similar to its predecessors, using a simple single-action mechanism, meaning it could only be thumb-cocked by pulling back on the hammer. Problematically, Colt believed the frame design to be strong enough solely by virtue of the barrel being held in place by a tapered wedge slotted through its axis pin, there being no upper supporting strap for the frame. This was an oversight that was to cause problems in later years as the wedges had an unfortunate habit of either dropping out if they became loose, allowing the frame and barrel to part company, or jamming solidly in place, preventing removal of the barrel and cylinder.

How many of these early experimental guns were manufactured is open to conjecture; some were made by Anson Chase and others by a Baltimore gunmaker named John Pearson. Certainly, sufficient numbers must have been produced to raise interest among the US military, for by sheer coincidence – something that seemed to follow Colt through its manufacturing career – the Mexican–American War broke out on the same date (April 25, 1846) that Colt was granted his patent. Some revolvers had been acquired by Texas Rangers, who were heavily engaged in the fighting, and as a result demand began to escalate for the new revolving pistols.

In 1835, Pearson produced another experimental revolver, a large model with a six-shot cylinder and pleasingly clean lines. It was 13.5in long, weighed 4.25lb and had five .53-caliber chambers. It used the same mechanical system as the earlier model, and also shared the folding trigger, having no trigger-guard, but it was to be the last of the experimental line prior to Colt establishing his Patent Arms Manufacturing Company at Paterson, New Jersey. Colt had realized that these experimental revolvers did not lend themselves to factory mass-production.

THE PATERSON YEARS

Colt decided to build a factory because of his inability to meet the burgeoning demand for his revolvers. As well as the earliest of the lineage of Colt single-actions, the firearms manufactured at Paterson also included rifles, carbines, and even a few muskets sharing the same rotating-cylinder concept. All followed the basic lines of the pistols made by both Chase and Pearson, but one only has to look at the 1835 drawings of the experimental revolver to see how complex the mechanisms were.



As soon as the Paterson factory was established in 1836, Colt produced a simplified “belt pistol” which is now recognizable as

the first of the true Paterson models. It was not dissimilar to earlier designs but was nowhere near the size of the Pearson revolver, being a modest 8in long, of .32 caliber, with five chambers, and having a dubiously useful folding blade that locked under the barrel. It used

the standard single-action mechanism, but did possess an improved locking mechanism, with stop-holes visible in the center of the cylinder that were engaged by a central bolt in the lower frame. In an improved model, probably made in the same year, Colt sensibly omitted the blade and had an octagonal barrel fitted. There were more subtle mechanical improvements, however: the cylinder design was much improved, with its rear face rounded off between the nipples, as percussion caps jammed in the recess – a problem still recurrent today – and five steel pins protruded from the rear face of the cylinder that engaged in a slot in the lower face of the hammer arm, creating a mildly effective form of safety position.

The lock-stop holes were moved farther back and the muzzles of the chambers were slightly chamfered. This facilitated loading, of course, and allegedly acted to help prevent flash-over and accidental ignition of adjoining cylinders. The barrel was still retained by a wedge when the cylinder was removed for loading and the arbor could be used to force the bullet into the chamber, there being no separate loading lever, although a tool was provided to enable the revolver to be loaded with the cylinder *in situ*. This useful addition appeared on Paterson models produced after

An early Paterson belt pistol in .32 caliber with a questionably useful folding blade. At a little over 8in in length, the revolver was compact, but it never went into full production. (Colt Firearms Collection, Wadsworth Atheneum)

A Paterson holster pistol, in .36 caliber. This had a slightly larger frame than other models and became known as “The Texas Arm.” (Colt Firearms Collection, Wadsworth Atheneum)



1839. The revolvers were manufactured in calibers of .28, .31, .34, and .40 and were either belt or holster models, depending on caliber. As they were designed to shoot a round ball rather than a conical bullet, when looking at the rifling of a Paterson, it appears almost straight, having virtually no visible twist; but for the distances over which they were required to be fired, this was deemed acceptable. Besides, sighting was rudimentary, with a small blade front sight and notch cut in the forward edge of the nose of the hammer, so that a sight picture was possible only once the gun was cocked.

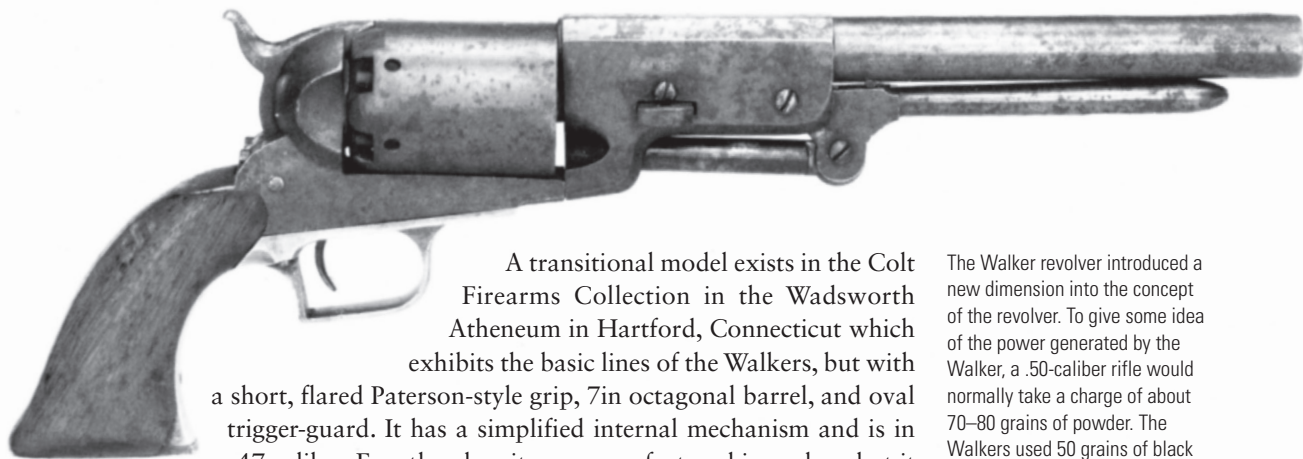
The Paterson factory only paid lip-service to mass-production, the reality being that these guns were virtually hand-assembled, often having considerable differences between them and featuring internal parts that were not interchangeable. This meant that it was possible for special revolvers to be made to order, however, and some truly beautiful inlaid and engraved Patersons exist today.

Despite the cost of Paterson revolvers, demand was high, predominantly for the larger-framed holster pistols destined for the Southwest, principally Texas. In fact, so much of the production run was sent there that these pistols were known by the factory as “The Texas Arm.” Most of the Patersons’ sales were to a mixed clientele, however, and Colt did little to specifically attract military sales. One event that worked unexpectedly in Colt’s favor had been the Californian Gold-Rush of 1848, when large quantities of gold had been found near Sutter’s Mill. This inevitably attracted tens of thousands of hopefuls from all over the world, all of whom needed supplying and clothing – and arming.

Demand for Paterson revolvers never reached levels by which production became profitable, and the Paterson Company folded in 1841. In a curious way, the failure of the company helped Colt; his patent was due to expire in 1850 so he successfully applied for an extension on the grounds that the collapse of the company prevented him from finishing the development work the revolvers needed. Colt was granted another seven years, the patent not now expiring until February 1856. This extension enabled Colt to pursue manufacturers who had infringed his design and he won a vital lawsuit against the Massachusetts Arms Company in July 1851. This assured Colt of dominance in the field, at least until the patent expired.

THE WALKER

It is widely held that Samuel Colt came up with the idea for producing his famous large-framed revolvers following his chance meeting in 1839 in a New York gun-store with Captain Samuel Hamilton Walker (1817–47) of the Texas Rangers. Certainly, there is no doubt that in 1847 a new model was introduced, the Walker, but there is considerable evidence that prior to then, Colt was already experimenting with a larger-caliber pistol as a logical follow-on to the Paterson models, in response to widespread requests for such a weapon from those who had used Patersons in anger.



A transitional model exists in the Colt Firearms Collection in the Wadsworth Atheneum in Hartford, Connecticut which exhibits the basic lines of the Walkers, but with a short, flared Paterson-style grip, 7in octagonal barrel, and oval trigger-guard. It has a simplified internal mechanism and is in .47 caliber. Exactly when it was manufactured is unclear, but it was probably about 1840; this indicates that work was already under way to improve The Texas Arm already carried by many Texas Rangers, but there is no evidence that the new revolvers were manufactured at the Paterson plant; and while Walker undoubtedly had a considerable influence regarding improvements to the later model, it is unlikely that he was the instigator of their design. While he did not actually suggest the concept of the new revolver, there is no doubt that Walker, who had considerable field experience of the Patersons and liked their multiple-shot capability, had been critical of some features.

One major revision needed, and which had caused Colt considerable angst, was improvement of the poor ramming lever fitted to the later Patersons. It was mounted in such a manner as to enter the chamber at an angle, which made seating a conical bullet squarely almost impossible. In addition, the frames were fragile and the folding triggers often failed to unlatch. Walker also believed the Patersons were not heavy enough in either physical or caliber terms for use by mounted men. Indeed, in his book Colt wrote that: "In consequence of the peace, they [Patersons] were scarcely again employed until the year 1847, when the Mexican campaign commenced under the command of General Taylor, who ... sent Captain Walker of the Texan Rangers, to procure from the author a supply of these arms, not one however, could be procured" (Colt 1992: 279). Certainly, the Patersons had served their purpose, but clearly something better was required.

Colt's latest pistol was chambered for .44-caliber ball; it had a six-shot iron cylinder, case-hardened hinged rammer, and 9in half-rounded half-octagonal barrel. It also had a straight-backed brass trigger-guard and weighed a whopping 4lb 9oz. A new rammer design obviated earlier problems, although the lever was retained by a rather feeble latch underneath the rear portion of the barrel. The trigger-guards were made in brass, forged steel proving too difficult to produce, and the grips lengthened and widened so that the revolver – which at 15in in length was naturally barrel-heavy – sat more comfortably in the hand. It employed a V-type mainspring and slightly oval cylinder bolt-stops.

As a representative of the US Ordnance Department, Walker contacted Colt in late 1846 with an order for "one thousand large-caliber revolvers"

The Walker revolver introduced a new dimension into the concept of the revolver. To give some idea of the power generated by the Walker, a .50-caliber rifle would normally take a charge of about 70–80 grains of powder. The Walkers used 50 grains of black powder with a 220-grain conical bullet which produces only slightly less energy than a modern .357 Magnum bullet. At the time, Captain Samuel Walker wrote "They are as effective as a common rifle at one hundred yards, and superior to a musket at two hundred" (Haven & Belden 1940: 53); and this was not really stretching the truth in view of the fact that it was regarded as almost useless to shoot a common smoothbore musket at anything beyond 200yd. (Author's Collection)

(Haven & Belden 1940: 287). Although the contract was signed on January 4, 1847, work had already begun by Eli Whitney of Whitneyville, Connecticut, who was to supply all the machinery to be used in their manufacture. (Colt shrewdly ensured that the machines would revert to his ownership once the contract was finished.) These early Walker revolvers incorporated many minor mechanical improvements, and required others, many of which were introduced when production was under way, drastically slowing down the manufacturing process and delaying their supply to the US Government. Another problem that arose was the employment of unskilled workmen, quite unused to the strict methods of production working in a factory. Colt had little ability to supervise or control this manufacturing process in Whitney's factory, and many parts were subsequently found not to be interchangeable.

In July 1847, Colt wrote that he had finally completed production of the 1,000 repeating pistols ordered by the US Ordnance Department "with all the alterations and improvements requested by Captain Walker" (Colt 1992: 295), and the first completed pistols were shipped to New York later that month. A presentation pair was also sent to Captain Walker, who was tragically killed fighting the Mexicans in October of that year and these guns were marked on the top flat "Address Sam'l Colt New York City" and on the right barrel flat "U.S.1847." The cylinders were roll-engraved with Mounted Riflemen fighting Indians and marked "Colt's Patent U.S.M.R." So few originals exist today that it is impossible to determine what military markings they were given, but of the first thousand, marks exist for companies A, B, C, D, and E.

The process of refinement did not cease, however, and Colt was already in discussion with the US Ordnance Department about a second contract of 1,000 revolvers before production of the first 1,000 had been completed. Evidence that Colt was already looking far into the future is provided in a letter written to the US Government in July 1847 in which he stated:

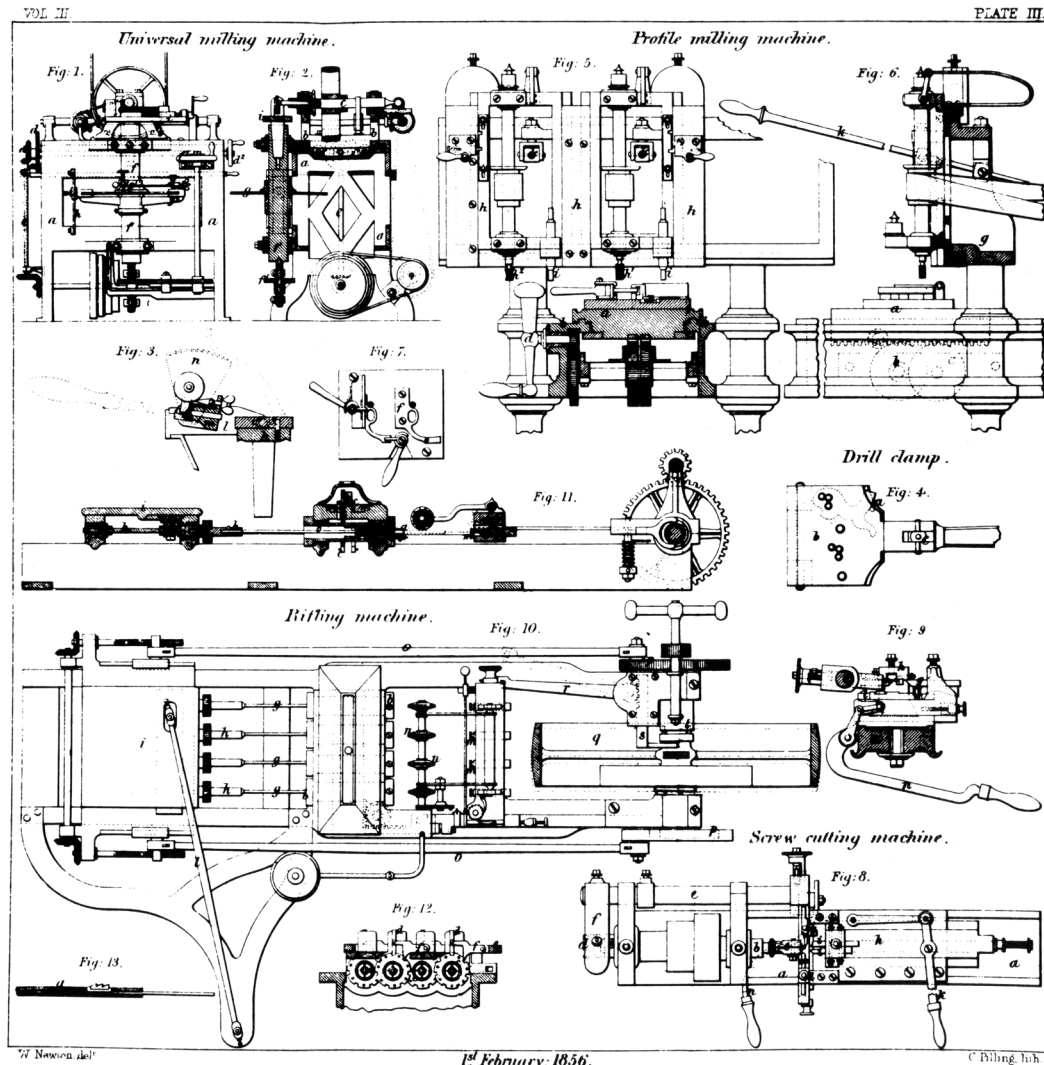
The encouragement I feel from the recommendation and requisitions of the officers in Mexico for my new moddled [*sic*] pistols that a large number may be required for our troops, has induced me to establish an Armory at Hartford ... to supply from four to five thousand a year, and I shall be in better condition to answer orders on short notice.
(Quoted in Haven & Belden 1940: 54)

Many of the production difficulties that arose during manufacture of the Walkers were, it is true, because of the need to introduce belated modifications to the design, but there were also other difficulties. Obtaining the quality of iron and steel needed was not straightforward; the manufacture of some parts that were strong enough, such as iron trigger-guards, could not be easily accomplished; springs proved to be incorrectly tempered; and there were problems with fitting together machined parts, such as the barrel assembly and frame. These matters were all resolved during the manufacturing process and the completion of the original contract was something of a watershed for Colt, for he now had access to the machinery and tooling required to begin production under his own name.

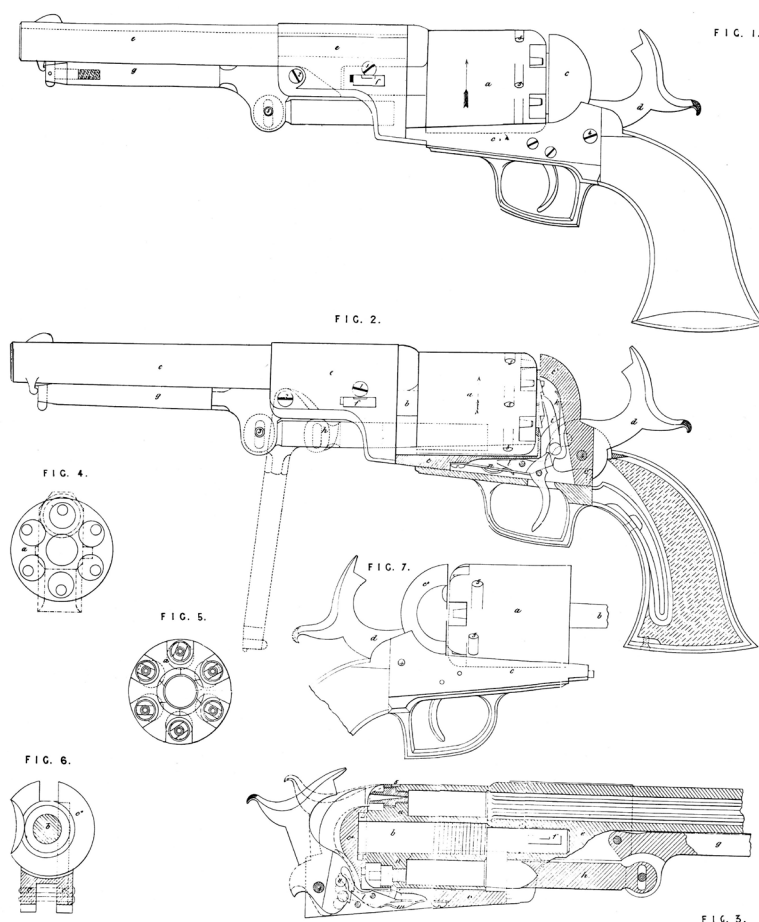
THE HARTFORD YEARS

Colt moved his manufacturing plant to Pearl Street, Hartford, Connecticut in late 1847. This period was to see Colt's first large-scale use of what was known as the "American method" of construction, using precisely gauged, interchangeable parts that could be accurately assembled by semiskilled fitters. Not only was Colt determined to oversee every part of the manufacturing process; he was also resolute in his belief that he needed to hire the right men for the job. This was most certainly the case at Pearl Street, for he employed Mr. Elisha K. Root (1808–65) who was a mechanical polymath. An inventor, mechanical genius, and highly competent engineer, Root became Colt's superintendent and immediately set about modernizing and improving the existing manufacturing machinery. Nothing – boring machines, lathes, jigs – escaped his attention, and where a machine was deemed inefficient he redesigned it. One milling machine was improved to the point where it remained in use virtually unmodified for another 150 years, becoming one of the cornerstones of the American system of mass-production.

Some of the manufacturing machinery produced and improved by the Colt Pearl Street factory in Hartford, Connecticut. (Author's Collection)



Colt's British patent document No. 12,668 of June 20, 1849, for the Dragoon revolver. The slightly more compact Dragoon rectified many of the problems associated with the Walker revolver. Initial changes involved much simplification of the still complex lock internals, which on a Paterson had comprised 17 parts whereas the Dragoons used seven, fewer even than the Walkers. Two models were produced, one with a 7½in barrel and one with an 8in barrel. The latch holding the loading lever on the Walker was dangerous, permitting the lever to fall under the recoil of firing, dropping the rammer into a chamber and thus preventing the cylinder from revolving. A new spring catch with a more positive action was located under the muzzle. The cylinders were reduced in length by ¼in, also reducing the powder charge by 10 grains; this permitted a modest weight saving to be made. Later Dragoon models had rectangular locking slots in the cylinder instead of the oval or round ones; these were more positive to lock and less prone to wear and also easier to machine (Author's Collection)



Completed in 1854, Colt's new factory at Hartford was the largest private arms-manufacturing plant in the world, with a workspace that occupied over 4,500 square feet. Colt also provided cottages for his staff as well as education and recreational facilities. To even out the often unbalanced factory wage system then used and to ensure more highly skilled men received better pay, he used a system of piecework, with workers having one job to do which was paid according to the level of skill it required and the speed with which the worker was able to do it. Every part produced was carefully gauged by inspectors to ensure perfect interchangeability. Surprisingly, given the apparently labor-intensive method of assembly, this manufacturing technique accounted for only around 10 percent of the cost of a revolver, some 80 percent being swallowed by cost of materials.

The Dragoon

Under Root's aegis, the factory began production of the next revolver contract in January 1848. Things did not go entirely according to plan, however, as the factory produced a mere 260 revolvers up to July of that

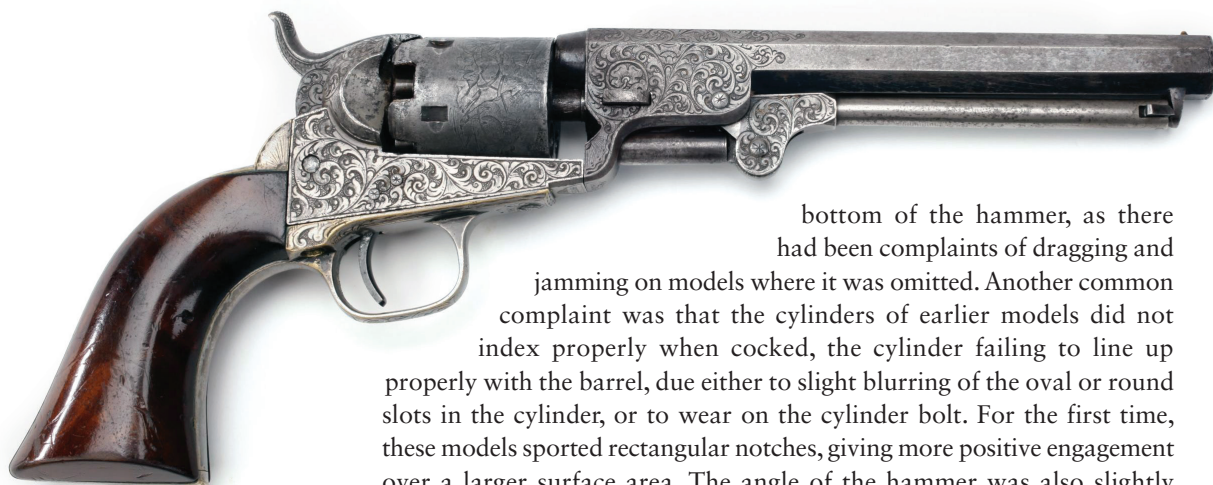
year. These guns were modified from their original Walker incarnation and were termed the “Old Model Holster Pistol, Model of 1848,” although they soon became known generically as the Dragoon models. Rifling on early-production Dragoon revolvers was a gentle left-twist, seven-groove type, but after 1849 gain-twist rifling was introduced to prevent the soft lead bullets, which left the cylinder with considerable velocity, from stripping themselves and leading up the barrel. The Dragoons were machined to accept a shoulder-stock that locked onto the butt by means of a simple clamp and thumbwheel. The stocks actually made shooting out to carbine range a distinct possibility, and some of the later No. 3 Dragoons were fitted with a folding leaf sight, to compensate for the altered point of impact of the bullet when using the stock.

The Dragoons continued in production until the introduction of the New Model Army revolver in 1860, with some 18,500 being made. Although the manufacture of the Dragoons was a great success, Colt was already busy identifying gaps in the marketplace. He had moved from the manufacture of the small-framed, rather delicate Patersons to the huge Dragoons, but he realized that there was still a strong demand for a pocket pistol that offered something in-between. Contrary to the usual images of the later Western period (between the 1850s and 1880s), if a man carried a pistol for self-defense it was not generally a large-caliber revolver slung low on a gunbelt, but more likely a small-framed .31- or .36-caliber pocket model, with short barrel, that would fit unobtrusively in a jacket or pant pocket. Colt decided that what was required was a revolver similar to the pocket Paterson but which was simpler to make, more robust, and cheaper to purchase.

The early Pocket Pistols

While still working at the Pearl Street factory, Colt manufactured a .31-caliber, five-shot revolver using the lock mechanism from the Dragoons combined with 3in, 4in, and 6in octagonal barrels. Although properly known as the Old Model Pocket Pistol (and today usually referred to as the Model 1848 Pocket Pistol), their similarity to the scaled-down military pistols earned them the soubriquet “Baby Dragoons.” The internals were almost identical, but in an effort to cut production time and cost, the small roller that was pinned to the bottom of the hammer to smooth its passage over the mainspring was initially omitted and the 3in-barrel model precluded the use of a loading lever. In common with other Colt models, an engraved scene was applied to the cylinders showing a fight between revolver-armed white men and mounted Native Americans. Exactly how many Old Model Pocket Pistols were manufactured during the year they were in production is unclear; some estimate up to 9,000, which would have been a prodigious number for a small factory in such a short timeframe. Whatever the number, it was clear from the outset that it was going to prove a popular model, so it was inevitable that a new model would follow in 1849.

The Improved Pocket Pistol was in most respects little different from its previous incarnation, although the roller was reintroduced to the



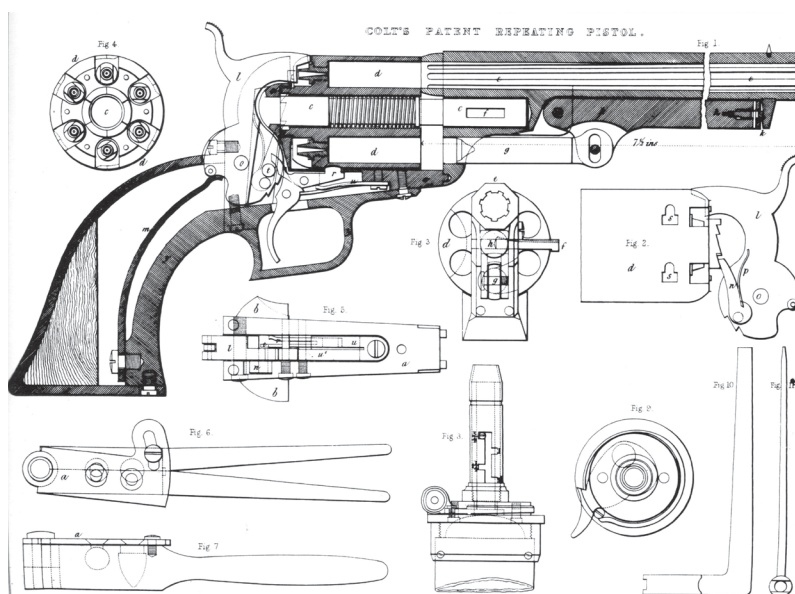
A Colt Model 1849 Pocket revolver, made in 1854. The engraving is typical of the work of the master engraver L.D. Nimschke, although it is not certain if this is his actual work. Such pieces would have been supplied in a luxury wooden case with accessories of equal quality. A second cylinder was often supplied, this revolver's cylinder being numbered "2." (NRA Museums, [NRA Museums, NRA Museums.com](http://NRAMuseums.com))

bottom of the hammer, as there had been complaints of dragging and jamming on models where it was omitted. Another common complaint was that the cylinders of earlier models did not index properly when cocked, the cylinder failing to line up properly with the barrel, due either to slight blurring of the oval or round slots in the cylinder, or to wear on the cylinder bolt. For the first time, these models sported rectangular notches, giving more positive engagement over a larger surface area. The angle of the hammer was also slightly modified and the trigger-guard rounded, apparently not due to popular demand but simply because it was an easier casting to produce. Manufactured in 4in, 5in, and 6in barrel lengths, the Improved Pocket Pistol was quite compact and slim, albeit quite long, at 11in.

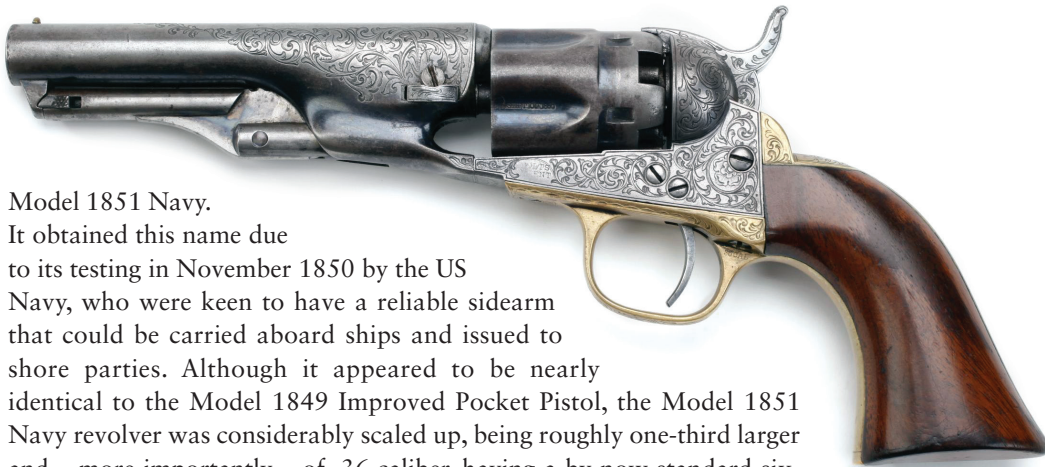
Thus began a period of model production that can easily become bewildering to the uninitiated. Between 1849 and 1872, when Pocket Pistol production ceased, hundreds of thousands of these revolvers were produced. The complexity of determining between the models is illustrated by the fact that two Old Improved Model Pocket Pistols were in parallel production, but the Model 1849 was a five-shot and the 1850 a six-shot – although the cylinders were theoretically interchangeable.

The Model 1851 Navy

Undoubtedly the most significant introduction was the 1851 pistol known as the Revolving Belt, or Navy Pistol, and generally known today as the



A sectional drawing of the Colt Model 1851 Navy revolver, produced in Great Britain after Colt's successful 1851 lecture in London to the Institute of Civil Engineers. (Author's Collection)



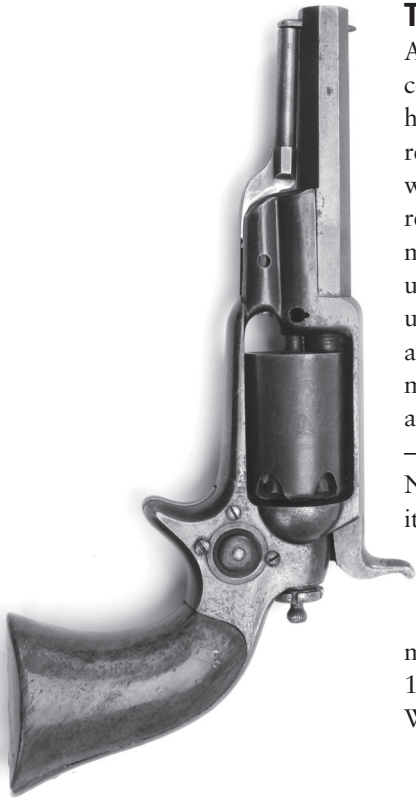
Model 1851 Navy.

It obtained this name due to its testing in November 1850 by the US Navy, who were keen to have a reliable sidearm that could be carried aboard ships and issued to shore parties. Although it appeared to be nearly identical to the Model 1849 Improved Pocket Pistol, the Model 1851 Navy revolver was considerably scaled up, being roughly one-third larger and – more importantly – of .36 caliber, having a by-now-standard six-chambered cylinder and 7½in barrel. It weighed a modest 2½lb and was considerably more compact than the Dragoon models, making it a far easier weapon to carry holstered on a belt; initially, the butt was slotted to enable a stock to be fitted. It was designed to use an 80-grain conical lead bullet and it could be ordered with accessories such as a fitted wooden case, powder flask, bullet mold, nipple key, and wrench. As with earlier models, the backstrap and trigger-guard were nickel plated and the rest of the revolver heavily blued.

The Model 1851 Navy proved to be a very accurate revolver, due to its slightly heavier 80-grain bullet, and accounts of it being used effectively at 100yd when fitted with a shoulder-stock are quite plausible. As a result of its popularity, in late 1851 Colt, who was always quick to react to possible new markets, began production of the Old Police Model with a .31-caliber, 3in barrel and no loading lever; this model was manufactured from 1851 to about 1861 specifically for use by policemen and the messengers of the newly formed Wells Fargo Company, which had been established in 1852. These revolvers can easily be confused with the earlier Model 1849, but the lack of a loading lever is a clue; this was omitted in the belief that the revolver would be loaded in an office prior to being carried and that there was little likelihood of it being used to the extent that it would require reloading. Admittedly, the omission of a loading lever also made the revolver lighter and reduced the likelihood of it catching on clothing, but carrying one must have made the owner feel that it really was a last-stand weapon.

Other models appeared with bewildering regularity. The New Model Police Pistol, New Model Pocket Pistol (Navy Caliber), Improved Pocket Pistol, and Old Model Navy Pistol are some, but by no means all, that were manufactured between 1849 and 1872. Although total sales of the pocket pistols exceeded those of the Model 1851 Navy, as a single model it was undoubtedly the latter that proved most successful, with some 250,000 examples being manufactured. During this time Colt, who was notoriously slow when it came to filing his patents, applied to the US Patent Office for an extension to his patent rights, which would expire in 1850; he received a reissue of his patent for revolving-breech firearms that would continue until 1856.

A Colt Model 1862 Police revolver in .36 caliber. Only around 20,000 of these were made as production ceased in 1873 and many surviving examples were converted to rimfire or centerfire ignition. They are often mistaken for the early-model .44-caliber Army revolver. See also page 22. (NRA Museums, NRAMuseums.com)



In 1855 Elisha K. Root designed a simple sidehammer revolver which Colt put into production, the only such pistol type ever made by the factory. They were available in .28 or .31 caliber but never achieved the sales success that Colt hoped for. (NRA Museums, NRAMuseums.com)

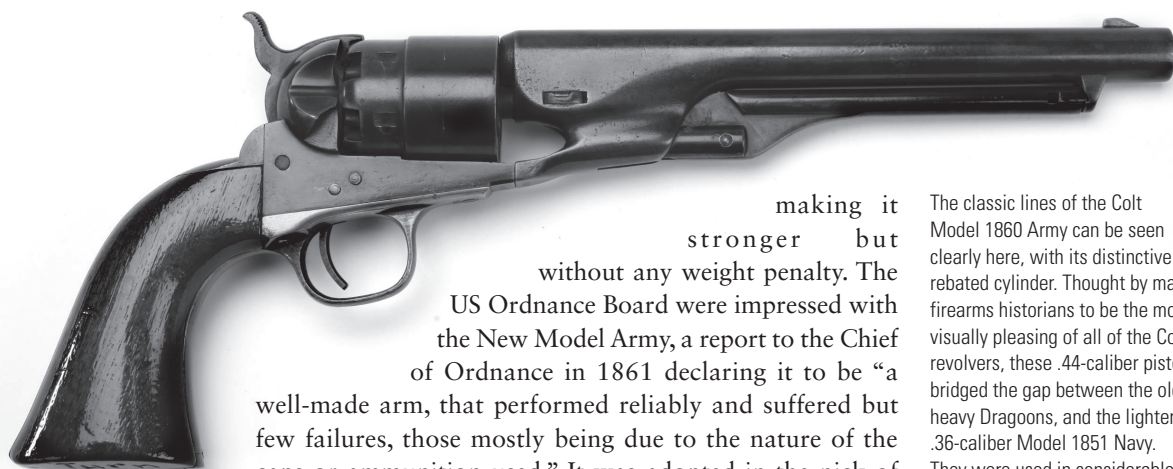
The Model 1855 Sidehammer

Although up to this point the bulk of Colt's revolvers had been of fairly conventional form, he was always open to innovative ideas and in 1855 his factory foreman, Elisha Root, presented him with a new design of revolver that he has been working on for a couple of years. For a start, it was solid framed with a top-strap over the cylinder, with the latter retained in place on its axis pin by means of a rear-mounted screw. The mechanism used the normal pawl or hand to pull down, rather than push up, on the cylinder ratchet, and it had a hinged ramrod. The trigger was unusual in form, being retained in an open guard, but most distinctive of all was the sidehammer, fitted externally to the right side of the frame by means of a large screw. In fact this was not a novel method of mounting a hammer – many rifle makers had employed them over previous years – but it was unusual on a revolver. Root's design was produced as the New Model Pocket Pistol, or Model of 1855 Pocket Pistol, which suited it admirably, for it was, with a 3½in barrel, only 8in long and weighed a fraction over 1lb. It was chambered for five rounds in either .28 (actually .265in) or .31 caliber. The pistol's popularity was due almost entirely to its compact size, as attempts to market .36- and .44-caliber models failed. About 45,000 were made before production ceased in 1872, many of which were carried as secondary arms during the Civil War.

The Model 1860 Army

Despite the popularity of the .36-caliber Model 1851 Navy pistols, there was clearly still a demand for a larger-caliber revolver, particularly for military use, but without the epic dimensions of the Dragoon series. It therefore seemed sensible to Colt to build something based around the already well-established Navy models in perhaps .44 or .45 caliber, so in 1860, the first New Model Army or Holster Pistol was produced. For many collectors this is the most handsome of the entire range of percussion revolvers, possessing more fluid lines than the Navy. It did actually use the same frame as the Navy, but with the front part machined away to accommodate a .44-caliber, six-shot cylinder of slightly larger dimensions and fatter grips to deal with the additional recoil. Early cylinders were fluted, but later production models used a stepped cylinder that was stronger and far easier to manufacture, and the barrel cone was reduced in length to accommodate the larger cylinder. Unlike the Navy, though, the barrel on the Army was entirely rounded, contributing greatly to its pleasing shape. The trigger-guard was of rounded brass and a shrouded ratcheted loading lever (often referred to as a "creeping lever") was used, which provided a more positive loading action as well as greater leverage. With an 8in barrel the Army was 14in long and weighed a modest 2lb 11oz; each chamber held a useful 30 grains of powder, giving the pistol an effective range of 25–50yd – assuming the shooter had sufficient ability.

In the years before the Civil War, the US Army tested the New Model Army with a view to adopting it as a service sidearm. In early 1860 a lighter, stronger type of steel was incorporated into its manufacture,



making it stronger but without any weight penalty. The US Ordnance Board were impressed with the New Model Army, a report to the Chief of Ordnance in 1861 declaring it to be “a well-made arm, that performed reliably and suffered but few failures, those mostly being due to the nature of the caps or ammunition used.” It was adopted in the nick of time, for war broke out between the Union and Confederacy in April 1861. Colt records show that the Union Army purchased 129,730 New Model Army revolvers at \$17.69 each (\$488 in today’s money) with a purchase of a further 257,287 Colt percussion revolvers of other types, many being Model 1851 Navy pistols (Colt 1866: 389).

The classic lines of the Colt Model 1860 Army can be seen clearly here, with its distinctive rebated cylinder. Thought by many firearms historians to be the most visually pleasing of all of the Colt revolvers, these .44-caliber pistols bridged the gap between the old, heavy Dragoons, and the lighter, .36-caliber Model 1851 Navy. They were used in considerable numbers during the Civil War. (NRA Museums, NRAMuseums.com)

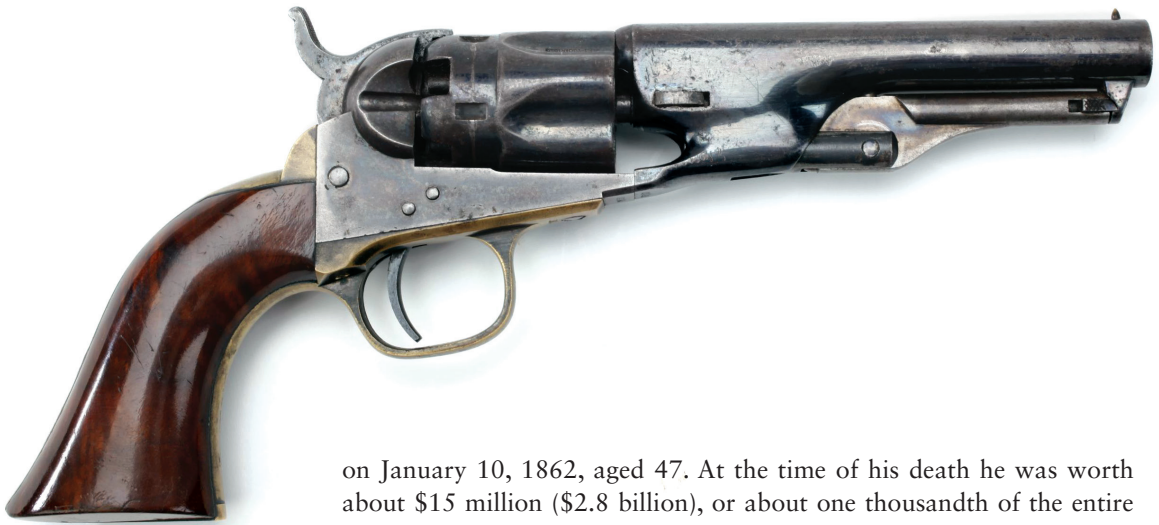
The Model 1861 Navy

At the same time, Colt also brought out a revised Navy revolver, the Model 1861, which used the round-pattern barrel and the ratcheted loading lever of the Army revolver, but retained the Navy’s original .36 caliber. Sales of the Model 1861 Navy were disappointing. In late 1861 or early 1862 a New Model Police Pistol was also offered, in a variety of barrel lengths, from 3½in to 6½in. It shared the round barrel and shrouded loading lever of the Army, but was in .36 caliber. This proved to be the last of the line of new percussion revolver models to be manufactured by Colt, for war was about to intervene.

In some respects the Civil War was to prove lucrative for Colt, but it was disastrous in others. Samuel Colt’s health had steadily been deteriorating due to overwork and his obsessive attention to detail which involved him in every aspect of the manufacture of his revolvers. He died

The Model 1861 Navy revolver was no more than a .36-caliber version of the .44 Army and was often preferred by cavalrymen, who liked its lighter weight and half-inch-shorter barrel. Some 40,000 were manufactured up to 1873, but only a few hundred were officially purchased by the Union forces. This well-used example has been field modified with a screw through the rear frame. (NRA Museums, NRAMuseums.com)





A left-side view of a Colt Model 1862 Police revolver that lacks the elaborate decoration of the example shown on page 19. The size of this revolver is difficult to gauge unless it is directly compared to one of the larger-framed Colts. At 8 $\frac{1}{4}$ in long and with a grip that can only be held using three fingers, it was certainly compact. It had a ratcheted or creeping loading lever and distinctive fluted cylinder. The Police was made in a more practical .36 caliber, although Pocket models were also available in .31 caliber. (NRA Museums, NRAMuseums.com)

on January 10, 1862, aged 47. At the time of his death he was worth about \$15 million (\$2.8 billion), or about one thousandth of the entire GDP of the United States! Elisha Root was elected company president in his stead. Just over two years later, in the early hours of February 5, 1864, a huge fire swept through the factory in Hampton, fueled by the oils used in the cutting machines; the entire Old Armory was destroyed, the value of loss being equivalent to about \$18 million today. Although never proven, the fire was believed to have been the work of Confederate sympathizers. The following year Elisha Root died suddenly, depriving the company of a manufacturing genius whose ability and understanding of the arms-manufacturing industry would prove to be impossible to replace.

THE CARTRIDGE REVOLVER ERA

As always, war proved to be the most effective and generative catalyst for the myriad new firearms types that emerged; but of all of the inventions that appeared, one in particular was to have an impact – in every sense of the word – that was undreamed of at the time. Until the early 1860s all ammunition in use had been of the combustible, black-powder type, with a paper tube containing the charge and bullet. The tubes were fragile, prone to disintegrating if roughly handled, and they often failed to function in damp conditions. Percussion caps, although reliable, were small, fiddly to use – particularly on revolvers – and the percussion nipples had to be kept clean if they were to function reliably. Self-contained cartridges had been produced since the 16th century, but there was no method of manufacturing them so that they were small and reliable enough to be easily portable. The earliest practical example, made in about 1812 by Jean Pauly (1766–1821), used a combustible case with brass base that contained a detonating pellet. It was the introduction of a simple .22-caliber rimfire cartridge in 1845 by Louis Nicholas Flobert (1819–94) that was to change everything. Flobert used nothing more than a percussion cap with a .22 ball inserted into it. It was for target gallery use and had a range of only a few feet with a miniscule power output, but soon several other inventors built upon his

idea and in 1847 Benjamin Houllier (1812–67) perfected patents that included the use of a copper or brass tube as a cartridge case. Larger-cased rimfires began to appear during the early 1860s and by the end of the Civil War, sizable metallic rimfire cartridges were being used in rifles such as the .50-caliber Henry and .52-caliber Spencer. By the time the war ended, firearms that chambered cartridges were no longer regarded as something of a novelty. The percussion age was about to end.

Patents and prototypes

It was an unknown American gunsmith, Rollin White (1817–92), who came up with a viable solution for using a cartridge in a revolver. White was also employed by Colt as a contractor but in his spare time he worked on the idea of producing a revolver that could fire a self-contained cartridge. The problem was, how to ignite a cartridge that already contained a priming cap, so in 1854 he drilled a hole right through the cylinder of a Colt revolver, thus enabling a firing pin on the face of the hammer to strike the rear of the cartridge. It was not exactly groundbreaking technology in itself, but this simple act was utterly to change the nature of the handgun. Today this appears such a blindingly obvious solution that it is hard to comprehend how it could have been regarded as a daringly experimental move. In the mid-1850s, however, the metallic cartridge was a rare innovation, and White's act was simply an attempt to find a means by which to employ the new ammunition in place of percussion ignition.

White very sensibly patented his idea on April 3, 1855 but by extraordinary good fortune, in May of that year, Colt's patent for revolving cylinders expired – an event that was to prove crucial not only for Colt but for the future development of the revolver as a practical sidearm, and which was to be the cause of an inordinate amount of legal wrangling over the next few years. Two astute gunmakers, Horace Smith and Daniel B. Wesson, wrote to White on October 31, 1856: "I notice in

An early Rollin-White Patent revolver (based on a Colt Model 1851 Navy frame) incorporating an automatic primer and box magazine for linen cartridges. It would soon be much refined. (Roy Jinks)



a patent granted to you ... extending the chambers of the rotating cylinder through the rear end of said cylinder so as to enable the said chambers to be charged from the rear end ... which I should like to make arrangements with you to use in the manufacture of firearms” (quoted in Jinks 1977: 34). With the legal protection of the Rollin White patent behind them, Smith & Wesson immediately began production in 1859 of a small .22-caliber tip-up revolver, the Model 1 – the first cartridge-loaded revolver to be produced – thus stealing a march over Colt that would take years for the company to redress.

There were drawbacks to rimfires, however. The larger they became, the stronger the cartridge cases had to be to ensure they didn’t rupture when fired, which in turn made it more difficult to ensure that they ignited reliably. Experiments continued in Great Britain and the United States to find a practical solution, but this proved difficult, in part due to the then-primitive nature of metal-extruding technology. A partial solution was found by a Colt employee, F.A. Thuer, who came up with a complex arrangement involving a ring containing a sprung firing pin that had to be removed to allow for a tapered, two-piece centerfire brass cartridge to be inserted from the front, in the same manner as inserting a ball and powder. The ring was then replaced and the revolver cocked and fired. While this arrangement utilized the original cylinder, the problem was that the cartridges, being tapered, were retained in the cylinder only by friction and if they moved forward under recoil or if the revolver were dropped, the firing pin would fail to reach the primer. Reloading the cases was also a fiddly and time-consuming business, and manufacturing the conversions proved expensive. Although Thuer was granted a patent on September 15, 1868, the subsequently converted Colts (about 5,000 in total) never proved popular. It was one of the rare occasions when an invention adopted by Samuel Colt failed to make money.

A Colt Thuer conversion.
Awkward to use and expensive to make, it was never profitable for Colt and manufacture ceased after Rollin White’s patent expired in 1869. (Courtesy of the Rock Island Auction Company)

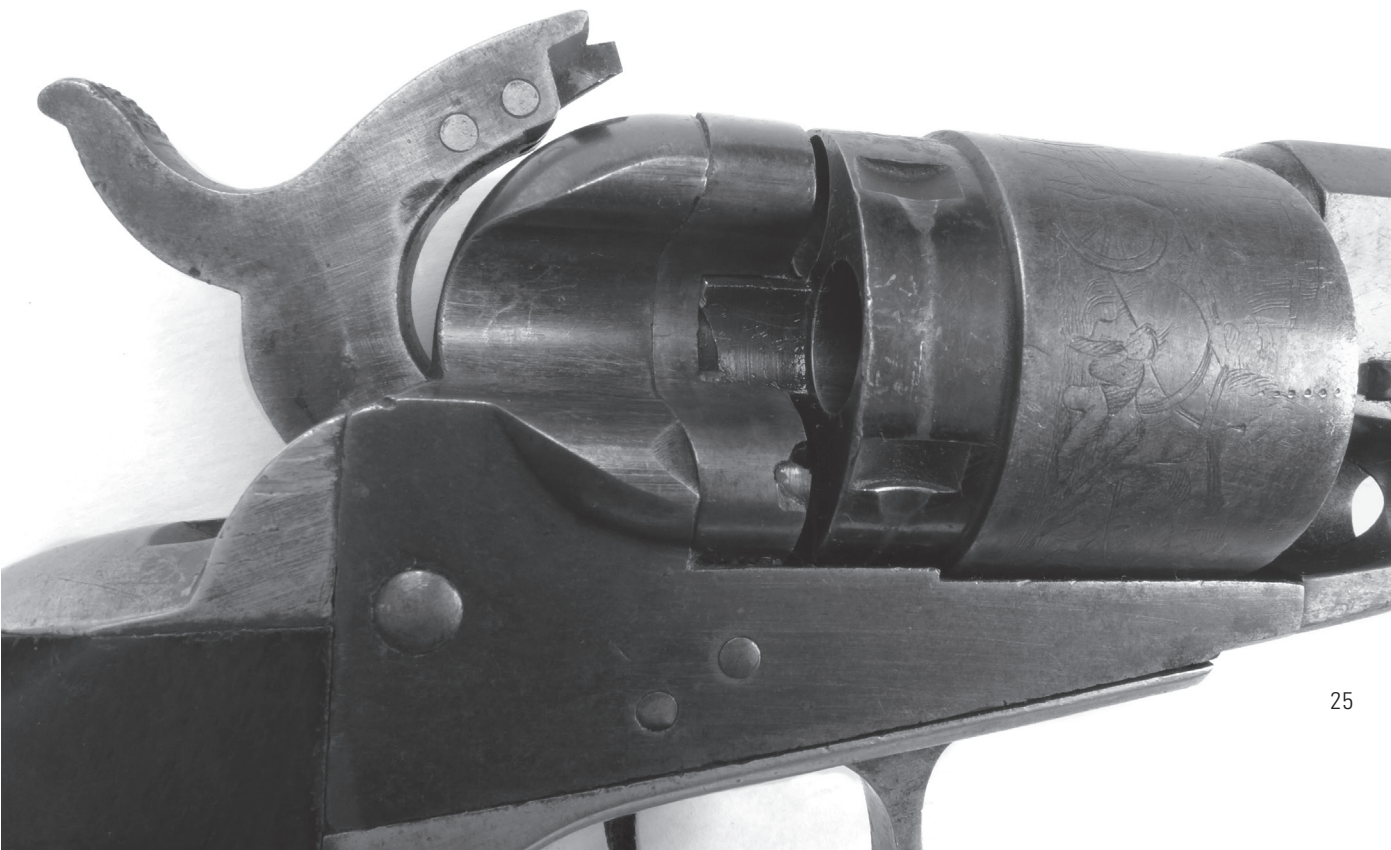


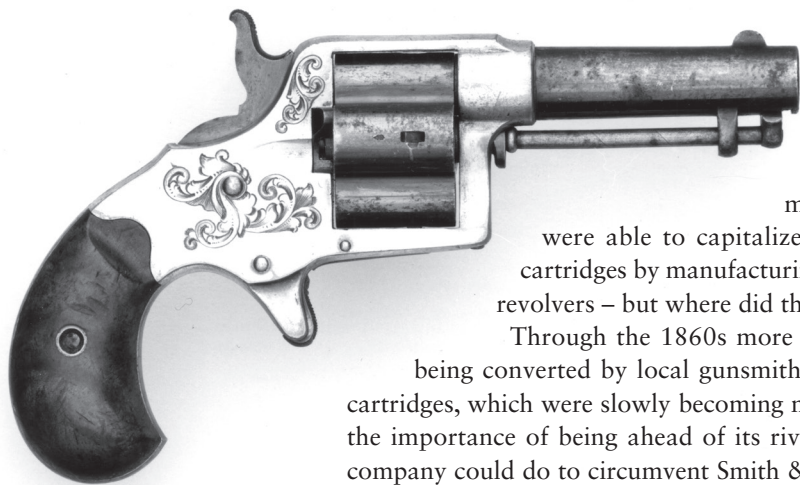
Perfecting the centerfire cartridge

Colt was frustrated by his inability to circumvent Smith & Wesson's iron grip on the revolver market, but to a certain extent the effect was ameliorated by the very nature of Western expansion. Many of the men who carried revolvers did so in places as remote as it was possible to be and where supplies of anything were simply unobtainable. They had to carry everything they required with them and that included powder, ball, and caps. While the *concept* of a cartridge revolver was a good one, even rimfires were of little practical use on the frontier, for a fired rimfire cartridge could not be reloaded. Primitive centerfire ammunition, of any type, suffered similarly – and Colt's dominance of the marketplace had ensured that tens of thousands of perfectly useable percussion revolvers were still in circulation. This did not stop the development process, of course, and it was the near-simultaneous introduction of two perfected centerfire cartridges that would take the revolver to a new level of sophistication.

It is a curious fact of history that many inventions have benefited from appearing from different directions almost simultaneously, and centerfire ammunition is no exception. On March 20, 1866, ex-Civil War general Hiram Berdan (1824–93) was granted US Patent 53,388 for a brass-bodied cartridge case with a percussion primer in its base. A mere seven months later, on October 13, 1866, Great Britain's Colonel Edward Mounier Boxer RA (1822–98) was granted US Patent 91,818 for a nearly identical system. There were subtle differences, though: Berdan cartridges were brass-bodied and used a standard percussion cap that was impact sensitive, whereas early Boxer cases used wrapped foil brass with a riveted steel base containing a percussion cap that relied on striking a tiny internal

A close-up of the cylinder of a Richards-Mason conversion. It proved both functional and practical and the basic design was later incorporated into Colt's generation of cartridge single-actions. (Dr. Robert Maze & Dr. Laurie Landau)





The small-framed Colt House Model was chambered for a .41 rimfire cartridge. Although produced as a five-shot revolver, examples such as this one, with a four-shot cylinder, were known as the Cloverleaf. These models were only produced during 1871–75. (© Royal Armouries XII.3731)

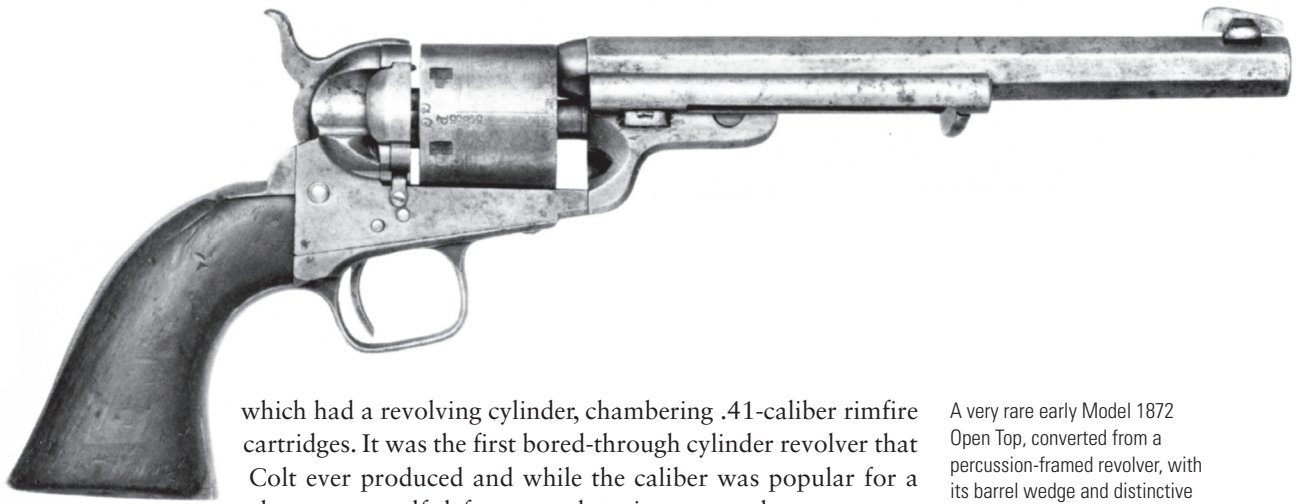
anvil to cause ignition, making Boxer cases more difficult to reload and slightly more complex to make. Smith & Wesson, at least, were able to capitalize on the introduction of these cartridges by manufacturing their own range of centerfire revolvers – but where did that leave Colt?

Through the 1860s more and more Colt revolvers were being converted by local gunsmiths to take advantage of rimfire cartridges, which were slowly becoming more plentiful. Colt understood the importance of being ahead of its rivals, but there was nothing the company could do to circumvent Smith & Wesson's patent, and in 1867 Colt rejected Rollin White's offer of buying his patent outright for \$1 million, in part because the patent was due to expire in 1869 anyway. The problem plaguing revolvers that chambered the rimfire cases was that the soft copper often expanded on firing, jamming the base against the back-plate of the revolver and preventing the cylinder from turning. The stronger brass centerfire cases eliminated this, although rimfires continued in civilian use for many years. One partial solution was for Colt to introduce its own conversion, designed by William Mason (1837–1913), who worked as a patternmaker for the company. Mason had already patented a swing-out cylinder to facilitate loading, which Smith & Wesson promptly bought, using it on the Model 1896 Hand-Ejector revolver; by this date, Smith & Wesson had become the preeminent revolver manufacturer in the United States, producing over 400 revolvers a day.

In conjunction with another Colt engineer named Charles Richards (1835–1919), Mason produced a new cylinder with a back-plate and integral firing pin that chambered a new .44-caliber Colt cartridge. The fired cases had to be removed from the right of the frame via a hinged loading gate, and to ease this process the rammer was replaced by a sprung ejector rod. These Richards-Mason conversions also had a recoil plate behind the cylinder that contained a firing pin, the percussion hammer having its nose filed flat to accommodate it; a hinged loading gate facilitated loading and unloading. They chambered the new .44 American centerfire cartridge that used 30 grains of powder to fire a 225-grain lead bullet at a modest 680ft/sec. The conversions proved moderately successful, some 9,000 being manufactured. A number of Model 1860 Army, Model 1851 Navy, and Model 1861 Navy pistols were also converted and modifications continued well into the cartridge era.

LATER COLT REVOLVERS

In January 1870, in a significant legal decision, the US Supreme Court rejected an application by Rollin White for an extension of his patent, thus opening the floodgates for the manufacture of a whole new breed of revolvers. In 1871, Colt introduced a small-framed five-shot revolver that it called the House Model (and a four-shot variant called the Cloverleaf)



which had a revolving cylinder, chambering .41-caliber rimfire cartridges. It was the first bored-through cylinder revolver that Colt ever produced and while the caliber was popular for a close-range, self-defense revolver, it was not by any means suitable for other purposes.

A very rare early Model 1872 Open Top, converted from a percussion-framed revolver, with its barrel wedge and distinctive cut-out for loading the bullet. The added-on ejector rod housing is clearly visible. (Author's Collection)

The Single Action Army

In the latter part of 1871, under the auspices of Richards and Mason, a new, larger-framed Colt revolver was introduced. Called the Open Top, this used the more powerful .44 Henry rimfire cartridge and adopted a rounded barrel with the ejector rod and housing that had been used on the earlier Richards-Mason conversions, fitted to its right side. Colt was very keen to break once again into the lucrative military marketplace, which was being filled by Smith & Wesson with the .44-caliber No. 3 First Model American, and so the company submitted the Open Top for US Ordnance Board trials in 1872.

In appearance the Open Top was not dissimilar to the earlier Richards-Mason conversion, but it was chambered for the more powerful .44 Smith & Wesson Russian cartridge; two other examples were supplied for the standard .44 American cartridge. Tests continued for several months when out of the blue, the Chief of Ordnance, Major General Alexander B. Dyer (1815–74), announced that the Small Arms Board had decided that the new military caliber was to be .45in. Colt's engineers very quickly came up with a .45-caliber cartridge backed by 40 grains of powder, with a 225-grain bullet.

By this time the Open Top, which had initially been rejected due to frame weakness, had undergone several transformations, the most noticeable being the adoption of a top-strap over the cylinder to strengthen the frame. The cylinder was now removable and held in place by a sprung pin that took the place of the old barrel wedge, thus making disassembly far easier. Initially, this pin was held in place by a tiny screw, but this was later omitted, a sprung latch being used instead. The nose of the hammer had a rounded firing pin fitted into it that protruded through the back-plate and there were two engagement points for the pawl when turning the cylinder, as well as the normal oblong locking bolt. The front sight was a simple blade; the rear sight was a groove cut in the top-strap. There was something inherently pleasing and tactile about the design, with no

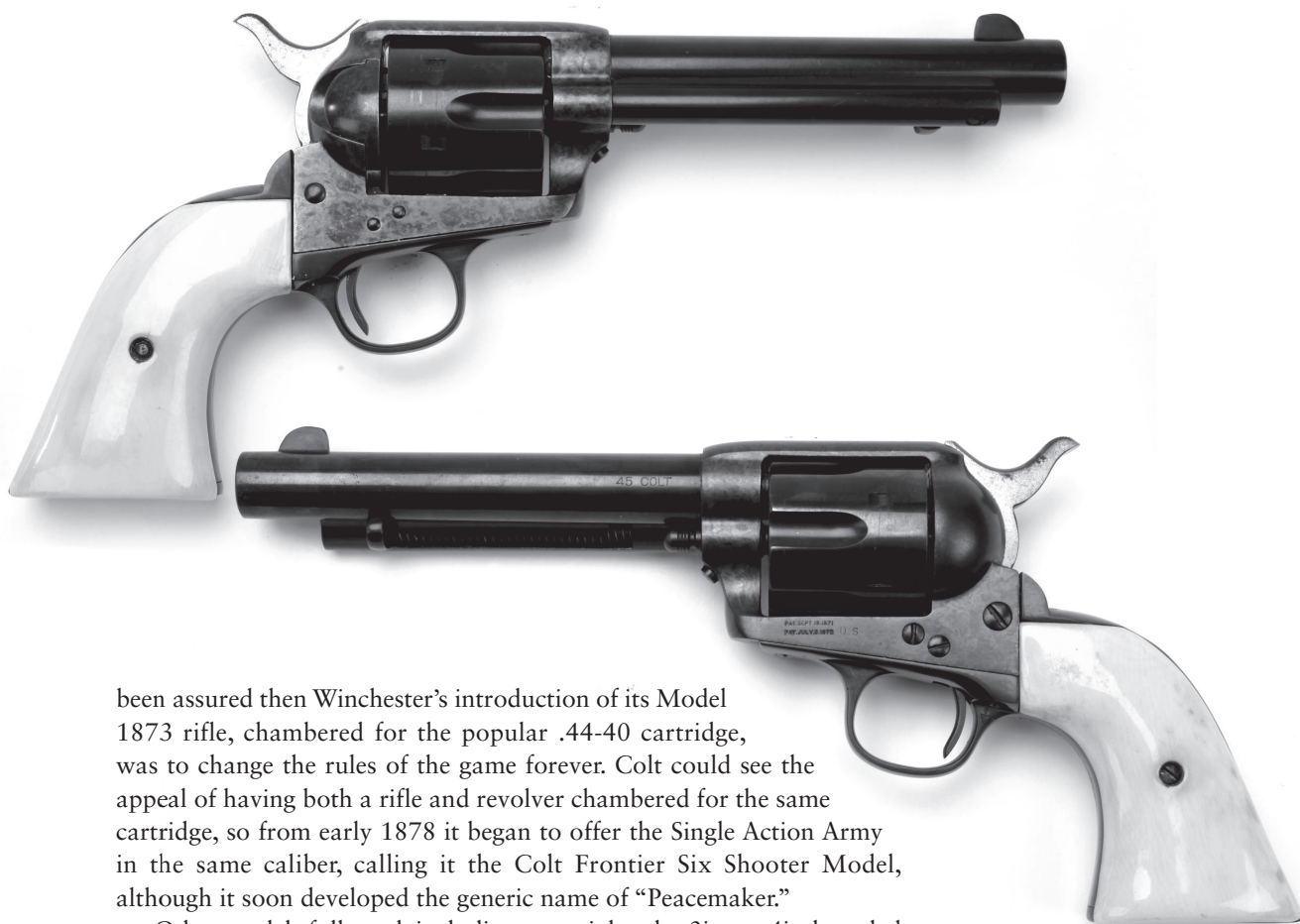
projections to snag on a holster or clothing, and while the loading gate was admittedly slow to use, it was possible to top up the chambers quickly without the risk of losing all one's ammunition as could happen with Smith & Wesson's automatic ejection system. In May 1873, at the National Armory in Springfield, Massachusetts, the Open Top was tested against the new Smith & Wesson revolver introduced by US Army Major George W. Schofield (1833–82):

In order to test its facility for loading on horseback the following trial was made, taking for comparison Colt's pistol, caliber .45. After preliminary trial with each kind of pistol an expert horseman was timed to see how long it would take him to eject six empty shells from this pistol and to reload it. The cartridges were taken from a cap pouch on the belt. The horse was at a hand gallop, the Colt's pistol began loading in twenty-six seconds, [i.e. after ejection of the old cartridges] loaded in sixty seconds. Major Schofield's pistol began loading in two seconds, loaded in twenty-six seconds. The officers pointed to the speed with which the Smith and Wesson could be unloaded and reloaded to illustrate the great advantage over the Colt .45 Single Action Army. (Jinks 1977: 90)

Although the Smith & Wesson Schofield revolver proved faster to load, it was deemed to be more complex, more difficult to strip, and more prone to fouling. It also had a worrying habit of becoming unlatched when being holstered, resulting in the loss of all the cartridges when the pistol was withdrawn from the holster – a shortcoming that naturally prejudiced many against the design. Strangely, in view of the Army's insistence that a .45 Government cartridge be common issue, the Smith & Wesson Schofields used their own .45-caliber ammunition, which was not interchangeable with the Colt's due to differing cylinder lengths; in 1874 this resulted in the production of a generic .45 cartridge that, although less powerful, could be used in either revolver. Nevertheless, some 8,000 Smith & Wesson Schofields were ordered as second-line revolvers for the Army, but they never commanded the allegiance of the Colt.

On June 26, 1873, Secretary of War William W. Belknap authorized the purchase of an initial batch of 8,000 of what were now termed Colt Single Action Army revolvers. The standard government lengths were supplied as cavalry (7½in) and artillery (5½in); a commercial model with a 4¾in barrel was available. While military contracts accounted for 37,060 Single Action Army revolvers up to 1891, it was not only the military that became enamored of the new handgun. Much of the Colt's popularity resulted from its mechanical simplicity and the ease with which it could be handled. True, it was still single-action only, but breakages could be quickly repaired by almost anyone with access to simple tools, and the design would withstand being dropped from the saddle without undue harm. Users did learn to keep the hammer resting on an empty chamber, however, for there was no safety mechanism and if the firing pin lay on a live round, a blow on the hammer could discharge the revolver.

If the popularity of the Single Action Army design had not already



been assured then Winchester's introduction of its Model 1873 rifle, chambered for the popular .44-40 cartridge, was to change the rules of the game forever. Colt could see the appeal of having both a rifle and revolver chambered for the same cartridge, so from early 1878 it began to offer the Single Action Army in the same caliber, calling it the Colt Frontier Six Shooter Model, although it soon developed the generic name of "Peacemaker."

Other models followed, including a special-order 3in- or 4in-barreled model with no ejector rod that was known at various times as the Sheriff's, Storekeeper's or Banker's model; also, in response to the popular and widespread target-shooting community, a unique target model, the Bisley, was introduced in 1894. This revolver, named after the world-famous shooting ranges in Great Britain, is distinguishable from the standard models by virtue of a curved grip-frame which houses a longer-than-standard mainspring and often an adjustable target sight fitted on to the top-strap with a front sight that could be adjusted for elevation. The Bisley had a wider and lower trigger spur and proved to be not only an excellent target gun, but also ideal for fast shooting. It continued in production until 1912, some 44,350 being produced in seven calibers including British .450 and .455 Eley.

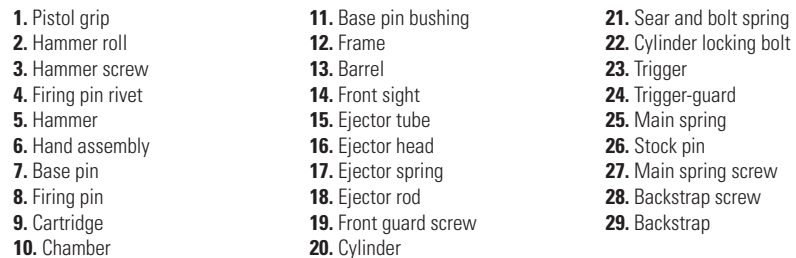
Aside from decorated and specially finished examples, special-order variants of the Single Action Army revolver were supplied to some customers; possibly the best known (and rarest today) were the so-called "Buntline Specials," these being Single Action Army revolvers with extra-long barrels up to 16in in length. They cost an additional dollar per inch for a long-barreled variant, but no factory records seem to have survived to indicate how many were manufactured, the best estimate being around 40.

An interesting Colt Single Action Army, chambered for .45 Long Colt and with a 5½in barrel. It is US marked and was originally issued to the 5th Ohio Infantry, then sold off and modified by the Wells Fargo Company, the owner adding ivory grips at some stage. (NRA Museums, NRAMuseums.com)

A misnamed "Buntline" with 12in barrel. Colt records show only 40 long-barreled guns were manufactured to special order in the period 1877–90, each of which came with a detachable shoulder-stock. This is a particularly fine inlaid and engraved example. (NRA Museums, NRAMuseums.com)



.45-caliber Colt Single Action Army

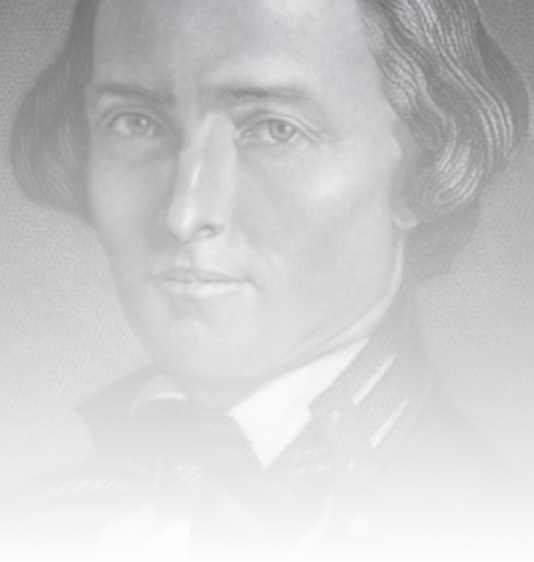




A Colt Bisley revolver, with its distinctively curved grip-frame. Although perhaps not as aesthetically pleasing as the Peacemaker, the Bisley was nevertheless believed by many to be a superior revolver. (© Royal Armouries XII.3730)

A new era dawns

During the 1880s there came a massive advance in ammunition manufacture with the introduction in France in 1884 of “Poudre B.” This smokeless, nitrocellulose-based propellant generated far higher chamber pressures due to its faster burn-rate, created almost no smoke, and was highly resistant to moisture – unlike black powder, which soaked it up like a sponge. Nor did it leave behind a corrosive, clogging deposit that necessitated frequent cleaning to ensure a firearm remained functional. Given Poudre B’s qualities, it was not surprising that ammunition manufacturers and gunmakers jumped at the opportunity to adopt the new technology. This posed a problem for the older firearms, however, whose breeches were not designed to cope with the higher pressures, so in 1889 Colt moved with the times and began to produce its first double-action revolver, the New Navy, chambered for a .38-caliber smokeless cartridge and featuring a swing-out cylinder to aid loading. The Peacemaker models continued to be produced, with strengthened cylinders that could cope with the new cartridges, but care had to be taken when shooting the earlier models, as ruptured cylinders could be the result of loading the wrong ammunition. The double-actions were more powerful and easier to load, and in 1892 the US Army adopted the new revolver in .38in Long Colt as its service sidearm. It was from this period that military and commercial use of single-action revolvers began a slow decline, as shooters moved to double-action smokeless-cartridge revolvers.



USE

Revolvers, revolution, and renegades

THE PATERSON MAKES ITS DEBUT

The first revolvers that appeared around the 1830s were of the pepperbox design. Clumsy, inaccurate, and unreliable they may have been, but compared to the existing single-shot pistols of the day they were a quantum leap forward. To have the luxury of more than one shot at a time when, quite literally, one's life could depend upon it, meant that most owners were prepared to overlook the revolvers' shortcomings; and they were comparatively cheap. When the first Paterson revolvers appeared on the market they sold from \$40 upward (\$1,100 today), whereas a pepperbox made by one of the more respected manufacturers such as Allen and Thurber retailed in St. Louis at around \$10 (\$297 today) or less. However, whereas the accuracy of a pepperbox was just about adequate for the average saloon, the Paterson was accurate in excess of 25yd even if the smaller-caliber models didn't have the punch of the larger pistols.

It was possible to fire all five chambers in four seconds, although this was not necessarily a technological feat that impressed all who witnessed it. Josiah Gregg, guiding a trading expedition across the Great Plains in 1839, commented that he watched as a mounted Comanche fired an arrow that hit a prairie dog at 50 paces (a little over 40yd). It was a remarkable shot, as the animal was almost totally obscured by a hillock and the arrow's flight had to allow for a sharp drop in trajectory to strike its target. Gregg then drew his Colt

with a view to paying a similar compliment to another dog; when finding that it excited the curiosity of the chief, I fired a few shots in quick succession, as an explanation of its virtues. He seemed to comprehend the secret instantly, and, drawing his bow once more, he

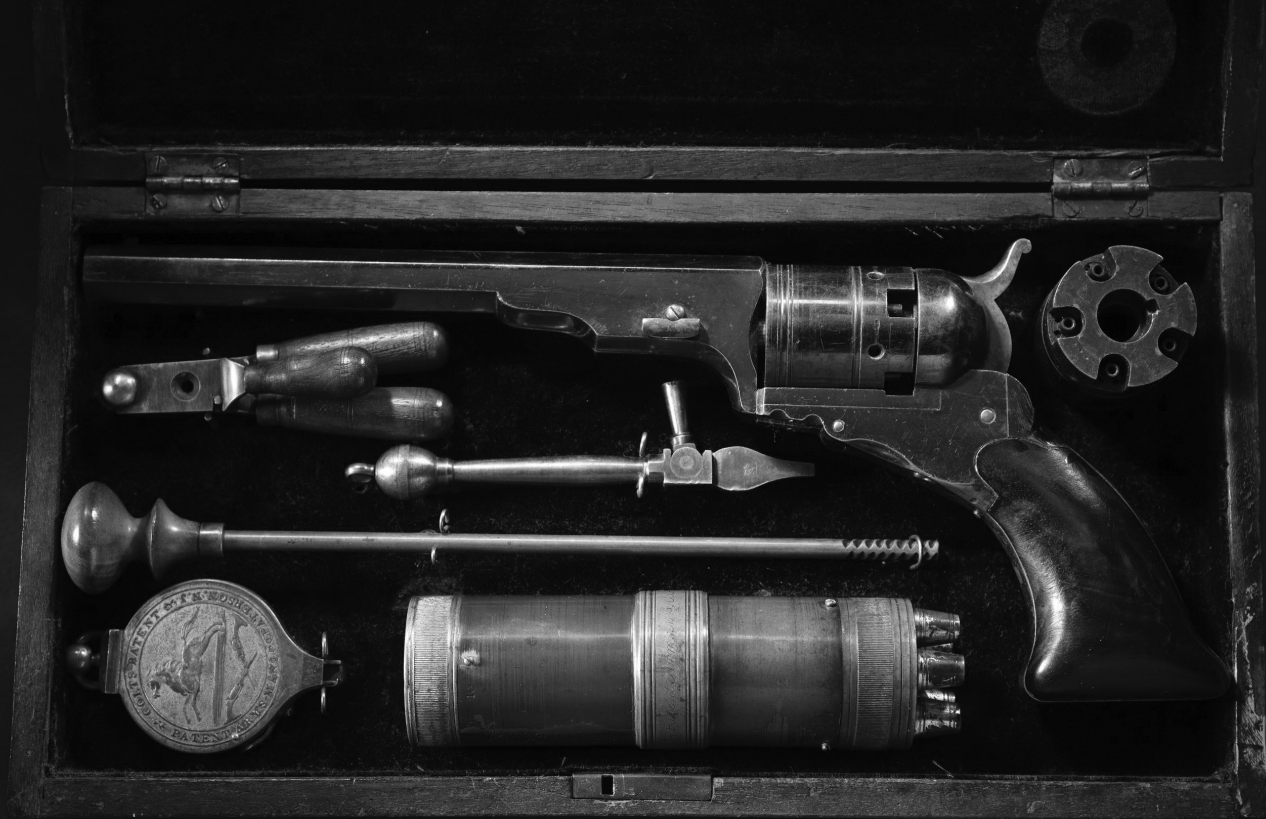


Manufactured by J.W. Edge of Manchester, this is a typical pepperbox revolver of the 1840s. Its heavy, bulky barrel cluster and centrally mounted hammer made it purely a short-range weapon. (© Royal Armouries XII.1188)

discharged a number of arrows with the same rapidity, as a palpable intimation that he could shoot as fast with his instrument as we could with our patent fire-arms. (Gregg 1954: 229)

Gregg concluded somewhat prophetically, “This was not merely a vain show; there was more of reality than of romance in his demonstration” (Gregg 1954: 229). Although Gregg describes how this particular Comanche chief nonchalantly accepted the display of firepower, this wasn’t always the case. Unused to such a volume of noise and smoke, many Native Americans were actually frightened by the revolvers. Edwin Bryant demonstrated his revolver to some Sioux near Fort Laramie in 1846 and recalled: “The rapid repeating discharges of Colt’s revolving pistol astonished them very much. They regarded the instrument with so much awe as to be unwilling to handle it” (quoted in Garavaglia 1984: 103).

As Gregg had noted, this new technology was frequently to prove no match for the Stone Age bows and arrows of the Native Americans. Nevertheless, there was a burgeoning demand for the new revolvers, particularly among guides and frontiersmen, who were prepared to pay to have the best, and in quantity. Gregg mentions that he and his brother each had a Colt revolving rifle and a pair each of Paterson belt pistols at the very considerable total cost of around \$300 (\$7,800 today). Accounts of the earliest use of these pistols are few and far between, as the numbers sold were comparatively small and of those carried an even smaller percentage were actually used in anger. On January 19, 1842 a Texas newspaper, the *Texas Gazette and Brazoria Commercial Advertiser*, reported a gunfight in which a Paterson featured: “Allston drew his knife to stab him, but Stewart perceiving his intention, fired three shots at him with one of his Colt’s pistols. Allston although severely wounded, fired a rifle and shotgun at his opponent which instantly killed him. The citizens of Brazoria arrested Allston, took him out and shot him.” It is interesting



to note that despite being struck by three bullets at what must have been point-blank range – drawing a knife is pretty well useless if you are 20ft away – Allston was still able to shoot and kill his opponent.

Many buffalo hunters used pistols and a combination of strong nerve and accuracy; it was quite possible to ride down a running buffalo and shoot it using a .50- or .54-caliber single-shot pistol. Doing the same with a Paterson was decidedly more dangerous, albeit the shooter had the luxury of having more than one chamber available. Even so, the .36 ball was at the lower ballistic limit for bringing down such a large animal. Nevertheless, there are a few surviving accounts that show the new revolvers found favor with hunters despite the Paterson having a major fault in the shape of the barrel wedge. Adventurer George Kendall, who borrowed a Paterson to hunt buffalo, had fired three shots at a fleeing animal when he raised his revolver to fire a fourth, only to see the barrel drop off. Amazingly, he was able to find both the barrel and wedge, but it was not an experience he cared to repeat (Kendall 1966: 64).

Without a doubt the most prolific users of these early Patersons were the Texas Rangers, who were frequently engaged in running fights with Native Americans and Mexicans. One of the best known Rangers was Captain John “Jack” C. Hays (1817–83), who early on became a firm advocate of the benefits of owning a Colt revolver and insisted his men were equipped with them. Some 180 No. 5 Belt Pistols had been sold to the US Navy but were then passed to the Rangers in 1843 and despite their fragility, they were put to frequent use. When the Rangers made contact with a group of Comanche warriors near the Guadeloupe River

An example of an expensive decorated and cased Paterson No. 5, with its unique multi-spout powder flask, permitting simultaneous charging of the chambers. All Paterson revolvers were blued and the barrels marked “The Patent Arms M’g Co. Paterson, N.J. Colt’s Patent.” With attention to detail typical of the period, the cylinders were roller-dye engraved with either a centaur armed with two revolvers, or a stagecoach-holdup scene. Of course, this did not come cheap: a belt pistol retailed at about \$50 in 1836, which equates to around \$1,300 today; a cased model, with loading and capping tools, bullet mold, and special five-shot powder flask, cost around double that. (NRA Museums, NRAMuseums.com)





The Alamo, March 6, 1836 (previous pages)

During this time, many of the Mexican regulars were armed with British-made Land Pattern smoothbore muskets, but French Pattern 1776 and Spanish Model 1752 muskets were also widely used. The defending Texans had an eclectic mix of longarms, almost all of which were privately purchased civilian types. Where pistols were concerned, however, this fight was an early example of a clash between old and new as some of the Texans were armed with the new Colt Paterson revolver, enabling them to take a heavy toll on their attackers. Around 250 Texas Rangers faced some 1,500 Mexican soldiers within the walls of the Alamo Mission. After two failed assaults, the Mexicans managed to scale the outer walls and fought hand-to-hand with the Texan defenders. Despite the Colts' superiority of firepower, they existed in numbers too small to make a real difference. Inevitably, sheer weight of numbers carried the day and all of the Texans died, but the Mexican forces suffered a disproportionate 600 killed and wounded.

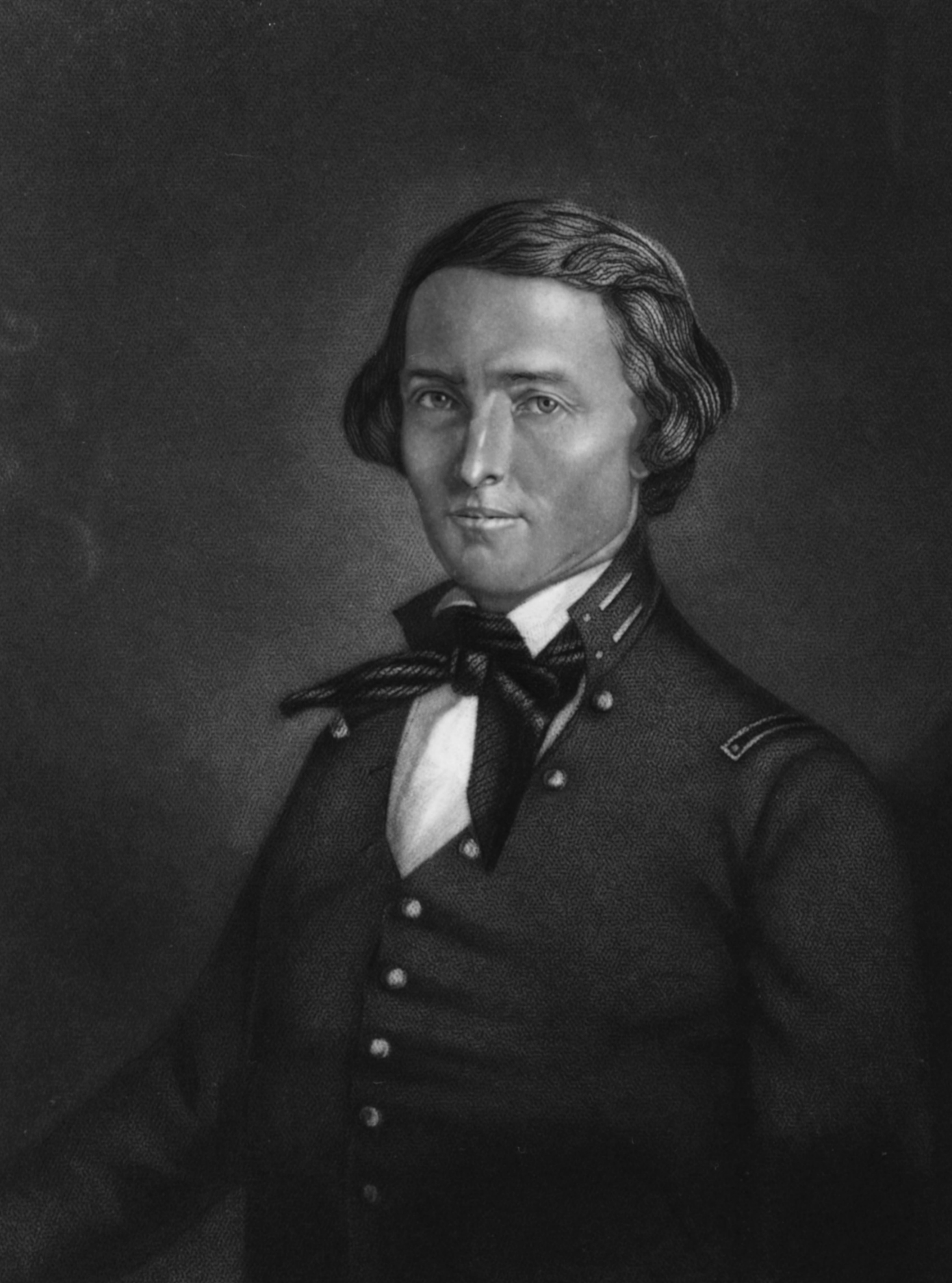
in 1846, a running fight broke out that cost the Rangers three dead and four wounded, but as Ranger Nelson Lee subsequently recorded, "They were two hundred in number, and fought well and bravely, but our revolvers as fatal as they were astonishing, put them speedily to flight" (quoted in Garavaglia 1984: 100).

As Lee pointed out, in carrying the Colts his men possessed five times the firepower of a man armed with a single-shot pistol, although this is not to say that the large-caliber, single-shot US military pistols, firing a .54-caliber bullet, were totally abandoned in favor of the new revolvers. One constant problem was the likelihood of dropping a Paterson while on horseback. The resultant impact often bent the axis pin, jamming the cylinder and rendering the pistol useless. While frontier repairs could work (a strong man could usually bend the axis pin back again), any more serious damage meant the pistol was useless. As a result, a variety of sidearms were carried, to cover all eventualities. Kendall noted that: "Each of my comrades had a pair of heavy belt pistols, and in addition one of Colt's revolving pistols, with a cylinder containing five shots. In my (saddle) holsters I had a heavy Harper's ferry Dragoon pistol, throwing a large ball with great force and accuracy. I also had my borrowed Colt's pistol" (Kendall 1966: 62).

Obtaining a Colt revolver on the frontier was not an easy matter; despite an agency having been established in St. Louis in 1841, orders had to be sent in writing and then shipped west, which could take three months or more. Things became even more difficult when the Paterson factory ceased production, although the revolvers were still available from gun-dealers until about 1847. How many were actually sold in this period is debatable, but 2,000 appears to be an accepted figure. The larger-framed Patersons with 7½in barrels had already been used with some success by Captain Samuel Walker, who had written glowingly to Colt:

The Pistols which you made ... have been in use by the Rangers for three years, and I can say with confidence that it is the only good improvement that I have seen. The Texans who have learned their value by practical experience, their confidence in them is unbounded, so much so that they are willing to engage four times their number. Without your Pistols we would not have had the confidence to have undertaken such daring adventures. (Haven & Belden 1940: 273)

OPPOSITE Captain Samuel Hamilton Walker (1817–47), Texas Ranger and champion of Colt's revolvers. (Photo by Kean Collection/Getty Images)



Walker, already a staunch convert to revolvers, had been frustrated by what he saw as the general ignorance of the government and populace with regard to the advantages of having a revolver, expressing his frustration in a letter to Samuel Colt: “I have explained the difference between yours and the six-barrel popgun [a pepperbox] that is in such general use a thousand times (but) they are still ignorant on the subject” (quoted in Garavaglia 1984: 138). Although there is no evidence that Walker had a hand in designing the model, his influence and sound advice was crucial both to its adoption and to its later success.

THE WALKER ENTERS THE SCENE

By 1847, Colt was manufacturing his first large-framed revolver, the Walker. In fact, it was a fortunate twist of fate that the Walker contract came to fruition just as Texas became a state in 1845, with the result that the cost of arming its soldiers suddenly became the responsibility of the Federal authorities. By further chance, war with Mexico was to break out the following year. A total of 1,000 Walkers were supplied on US Government contract, and the first of them were to see service in the Mexican Wars. The Walker was a truly formidable handgun, and nothing like it had existed previously. Actual deliveries to the Texas Rangers did not commence until late in 1847. Walker himself received a pair with the compliments of Samuel Colt, but just four days after receiving them he was killed at the hands of a Mexican lancer.

The big revolver worked well for the Texas Rangers and there are many accounts of its firepower being used to good effect. Trooper Chamberlain of the 1st Dragoons was one of the first to receive a Walker, but it was not through favoritism. His company commander “swore that I was more trouble than all the rest of the company, and ended issuing me a Colt’s revolver, one of twelve sent to him for trial. He tried to conceal this partiality by swearing he knew I would shoot myself, and would in this way get rid of his greatest trouble” (Chamberlain 1956: 34). It proved fortuitous for Chamberlain that he received the big Colt when he did, for he soon had cause to rely on it for his life when cornered in a ranch occupied by guerrillas:

Rather carelessly I held my revolver in my left hand and my Sabre in my right. One [guerrilla] ... fired on me point blank with a huge flintlock pistol. Fortunately he missed, but then lunged out with a machete while his companions closed on me. A shot from my “Colt’s” brought one down and then ... a dozen Dragoons came pouring onto the roof. (Chamberlain 1956: 32–36)

Aside from the deterrent effect of the Walker’s sheer size, if a round rather than conical ball was loaded, the cylinder of a Walker could be persuaded to hold about the same charge as the average .54-caliber rifle-musket. This charge could propel the bullet at an impressive 1,300ft/sec with 450ft/lb of muzzle energy. This was not necessarily a good idea, though, for the Walker’s cylinders were not always strong enough to survive such chamber pressures and 239 were known to have failed, having had to be returned



to the factory, although the true figure was undoubtedly higher than that. In May 1848, after the war with Mexico had ended, Captain John Williamson wrote to the Chief of the Ordnance Department on the state of the .44 Colts then in service:

Five companies of discharged men have turned in their arms and accoutrements. These men received less than a year ago 280 Colt's patent pistols of which 191 now revert to the U. States. The remainder bursted in their hands – though a few were lost in skirmishing with the enemy. Of the 191 turned in only 82 can be considered serviceable. All of the others have been more or less damaged by firing, and the wear and tear of eight months in the field. In some cases the cylinders are entirely destroyed – in others the barrels are irreparably injured where they join the cylinder, and again, having bursted at the muzzle, the barrels have been cut off to one half their original length. (Quoted in Garavaglia 1984: 145)

In the 1976 movie *The Outlaw Josey Wales*, directed by and starring Clint Eastwood, the eponymous character used two Colt Model 1847 Walker revolvers (albeit subtly converted to fire blank cartridges); numerous Model 1860 Army revolvers also feature in the movie. (Bettmann)

Jack Hays, by this time a colonel, states that for the first few days after his men received these arms they were continually bursting, but that “eventually

those which were left were fired with less certainty of such a result” (quoted in Garavaglia 1984: 145). Indeed, Colonel George Talcott of the 1st Dragoons wrote that his regiment “had never wanted Colt revolvers, preferring their old percussion single-shot pistols” (quoted in Garavaglia 1984: 149). This fairly damning comment is interesting, for it points to a number of problems that beset any military arms issued for the first time. Making a firearm soldier-proof is almost impossible, so overbuilding is usually required; but these first .44-caliber pistols were essentially designed for commercial use. If the chambers could be overfilled, that is what soldiers would do; if barrel wedges could be hammered into place to the extent that the slot was deformed, it would happen; and using a revolver as a club in a melee was never the best method of ensuring its future reliable function. Of course, there were manufacturing issues as well: the iron that the barrels and cylinders were manufactured from was too brittle and the barrels too long; the cylinder bolts wore unacceptably quickly, preventing the cylinders from locking properly; and the sears wore, creating a dangerous “part-cocked” position that could allow the hammer to drop unexpectedly. The Colt factory was not entirely to blame; in ordinary civilian use, these problems would have surfaced over a fairly lengthy period of time, and been gradually rectified; but the Rangers gave their revolvers a lifetime’s use in a year for war, as always, was the ultimate proving ground for weaponry.

Solving many of these problems was not overly difficult for the factory. Imported British steel, with a lower carbon content, greatly reduced the likelihood of cylinders and barrels bursting; to prevent excessive loads being used, the cylinders were shortened which reduced power capacity; and barrels were reduced in length to a more manageable 7½in. The new revolver was named the Dragoon and in 1848 the first 1,000 were supplied to the US Ordnance Department.

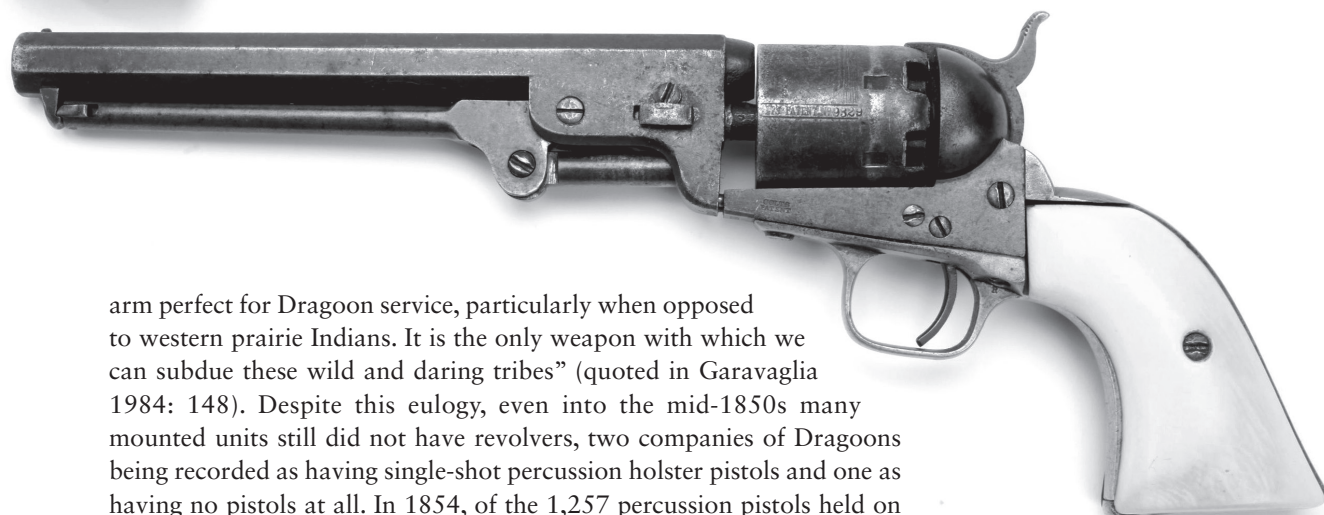
THE DRAGOON AND THE MODEL 1851 NAVY

The Dragoons were undoubtedly an improvement over the Walkers, the officer responsible for their inspection, Major William A. Thornton, reporting that in 1848, of 1,060 tested, there were only 53 burst cylinders and six defective barrels. Two years later, 2,082 were tested with only one barrel and one cylinder failing. In reality, no troopers received these revolvers until 1849, with the first issues going to regular Army units, namely two regiments of Dragoons and one of mounted riflemen. One small but important detail was the increase in the supply of spare cylinders; from the Paterson days these had been available as an optional extra, but were seldom required for civilian use. The Army, on the other hand, understood only too well that there was seldom time available to stop and reload an empty cylinder: about 90 seconds assuming perfect conditions. Being able to drop out an empty cylinder and insert a new one took about 30 seconds and could be done on horseback – a feat that was, if not impossible, certainly very difficult to achieve with refilling a cylinder.

The new revolvers appeared to meet the Army’s criteria, Brigadier General William S. Harney writing in 1850 that he now considered “the



A Colt Model 1851 Navy, the most numerous and popular of all of the percussion models, with in excess of 270,000 being manufactured. This example has the more commonly found rounded triggerguard, but a square-backed version was also manufactured. Curiously, it has had one of its grips replaced with an ivory one. (NRA Museums, NRAMuseums.com)



arm perfect for Dragoon service, particularly when opposed to western prairie Indians. It is the only weapon with which we can subdue these wild and daring tribes” (quoted in Garavaglia 1984: 148). Despite this eulogy, even into the mid-1850s many mounted units still did not have revolvers, two companies of Dragoons being recorded as having single-shot percussion holster pistols and one as having no pistols at all. In 1854, of the 1,257 percussion pistols held on charge, only 417 were Colt revolvers. This was partly due to the fact that the Army still held very large stocks of the old single-shot pistols and wanted to use them up before being forced to buy the new, relatively expensive revolvers; this attitude continued up to the Civil War. Many soldiers were prepared to provide themselves with their own privately purchased revolvers, however, and from their introduction in 1851, the new .36-caliber Navy models became especially popular.

The Dragoon revolvers had proven their worth in the harsh conditions of the West, but their size and weight were drawbacks and it was argued that for stopping a man, the big .44-caliber bullet was simply unnecessary, a .36 doing the job just as well. A Navy loaded with 23 grains of powder could propel a .36 ball at 915ft/sec – just under supersonic speed – with 149ft/lb of muzzle energy, considerably less than that of the .44 but still quite adequate for killing a man. Moreover, weighing 1½lb less than the .44 it was considerably lighter and more portable, and more powder and ball could be carried.

The problem, of course, was that the West was not exclusively populated by humans, but also by considerable numbers of large wild



A 1st Model Colt Dragoon. This martially marked Dragoon has oval cylinder notches and a squareback trigger guard. These early examples also lacked the wheel on the rear of the hammer that aided cocking and had no safety pins between the percussion nipples. In its two-year production run from 1848, around 4,000 were produced. (NRA Museums, [NRA Museums.com](https://www.nramuseums.com))

animals, of which the grizzly bear was probably the most fearsome. Captain Randolph B. Marcy recounted being surprised by a bear; having missed his shot, Marcy found it drove the animal toward his men who were armed with Colt Model 1851 Navy revolvers. A fusillade of shots hit the bear, but served only to enrage it further, and only the timely arrival of a horseman armed with a Dragoon revolver ended what could have become a messy encounter. When the bear's pelt was examined, it was found to have withstood all of the .36-caliber bullets without any serious internal damage, only the two .44 bullets proving fatal. There was no

consensus then, as indeed there is no consensus today, about which was the better caliber. After a lifetime's fighting experience, Marcy wrote:

Notwithstanding, Colt's army and navy sized revolvers have been in use for a long time in our army, officers are by no means of one mind as to their relative merits for frontier service. The navy pistol, being more light and portable, is more convenient for the belt, but it is very questionable in my mind whether these qualities counterbalance the advantages derived from the greater weight of powder and lead that can be fired from the larger pistol, and the consequent increased projectile force. (Marcy 1968: 101)

There were others who relied on their revolvers, for increasingly frequent wagon trains carrying people and supplies were moving westward and the newly established stagecoach routes made both prime targets for Native Americans, bandits, and guerrillas. The wagon-men took no chances, the *Missouri Commonwealth* magazine reporting in July 1850 that the Santa-Fe stagecoach was "guarded by eight men, armed as follows: Each man has at his side ... one of Colt's long revolvers, and in his belt a small Colt's revolver ... so that these eight men are ready ... to discharge 136 shots without having to reload."

The range of .36-caliber Colts that had been introduced from 1851 had taken the lion's share of the revolver market and from around this date, sales of single-shot pistols began to decline noticeably. Some men effected a compromise, carrying one of the smaller Colts such as a .31-caliber Model 1849 as a backup but keeping a Dragoon as their primary weapon. Regardless of personal preference, it seems that from the mid-1850s onward, the Navy revolvers began very slowly to replace the Dragoons in military service. Lieutenant John Hood of the 2nd Cavalry put his Navy revolvers to good use when surprised by a Comanche raiding party at Devils River in Texas:

I was armed with a double barrel shotgun loaded with buck shot and two Navy six-shooters. My men gave one yell and went right into their midst, and fought hand to hand, the Indians from their heavy fire, beating us back a little until I rallied my men with their six-shooters. Our being within four or five paces, our shots were so heavy we drove them back. I forced them all back until all of the shots of my rifles and six-shooters were expended ... If I had two six-shooters to a man, I would have killed and wounded near all of them. (Quoted in Garavaglia 1984: 196)

One important factor in favor of the smaller-framed revolvers was their ability to be carried comfortably on the waist-belt, and leather holsters began to proliferate within the Army and among civilians, the old saddle holsters not proving nearly as convenient. The normal military holster was flapped, to prevent the ingress of rain and dirt, but removing a pistol from a flapped holster was both awkward and slow when the pistol was needed quickly, which was most of the time. One Army lieutenant, traveling with a wagon party across the plains, noted that

so frequent were assassinations that each man ... as soon as he perceived another approaching him slipped his six-shooter to have it most convenient to his hand. Of course, the flap of the holster ... had long been cut off; it was preferable to suffer a little rust on the weapon rather than run the risk of losing a fraction of a second in drawing it. (Quoted in Garavaglia 1985: 204)

Many experienced travelers believed that where revolvers were concerned, following certain practices was vital to ensure longevity. One of the most traveled men of the era, the British explorer Sir Richard Burton, had sage advice for anyone contemplating heading west:

For weapons I carried two revolvers from the moment of leaving St Jo ... the pistol should never be absent from a man's right side – nor the Bowie knife from his left ... when the difference of a second saves life the revolver should be carried with its butt to the fore. As a precaution, it is wise to place the cock upon a capless nipple rather than trust to the intermediate pins. In dangerous places the revolver should be discharged and reloaded every morning, both for the purpose of keeping the hand in, and to do the weapon justice. A revolver is an admirable tool when properly used. (Burton 1963: 92)

There were some men who made an art out of carrying their Colts, and they weren't necessarily all gunmen. In the era before trick-shooting became a popular spectator sport, a few recognized the earning potential of their Colts:

A blacksmith's son in Jackson County, Texas ... could fire two powder and ball Colt's ... and do great execution. He once won a bet of two hundred and fifty dollars that he could kill six quails out of a flock sitting on the ground before they could get away. Some he killed on the wing after they had raised to fly. But the two-gun man ... was a rare specimen. (Thorpe 1952: 102)

Colt simply could not supply enough revolvers to satisfy Army and commercial demand, and many other makes such as Adams, Beaumont-Adams, Savage, and Kerr appeared in civilian and military hands during the later 1850s – but all had to take care they did not infringe Colt's patents. Indeed, 600 Adams were supplied to the Army in 1857 and over 10,000 Savages would be supplied to the Union forces during the Civil War. Nevertheless, where the US Ordnance Department was concerned, Colt was still the preeminent revolver and in the three years up to 1858, over 7,700 were supplied to the regular Army alone. This figure included a further 1,000 Dragoon revolvers, which were still being manufactured. It was not long before even these additional arms were to prove wholly inadequate, however.

The Dragoons were to be carried, as 1858 Army Regulation stated: "Two pistols and one stock for each man; one pistol in holster on belt, one pistol in holster on saddle, and stock on left rear side of saddle." In view

OPPOSITE The Chiricahua Apache leader Geronimo (1829–1909) holds a revolver sometimes identified as a Colt Model 1851 Navy. In reality it is probably a rare Confederate Colt Dragoon copy made by Dance Brothers of Columbia, Texas. (Photo by Transcendental Graphics/Getty Images)



of the weight of these revolvers, carrying only one on a waist-belt seemed eminently sensible. During the Gold Rush years, roughly between 1848 and 1855, Colt revolvers were among of the most sought-after arms: a Paterson revolver could sell for an astonishing \$250 (\$5,600 today) and a Dagoon, which normally retailed for \$25 (\$782), could fetch \$500. If this seems fantastical, just bear in mind that in 1850 a dozen eggs in a mining camp cost \$36 (\$804) and men often paid in pure gold.

THE PERCUSSION COLTS ABROAD

In part the Dagoon's success was due to Samuel Colt's developing genius in marketing his products. He took to shipping to or personally presenting examples of his revolvers to anyone in a position of power or influence. One early recipient was Zachary Taylor (1784–1850), Major General of the US Army, and most of these presentation pistols were of very high quality. Colt had employed several very talented engravers, among whom were émigré European craftsmen such as Gustave Young, Louis Nimschke, Cuno A. Helfricht, and Rudolph Kornbrath. These men were effectively jewelers in terms of the detail and quality of their work, and their finest revolvers were inlaid with gold or silver, sometimes precious stones, with grips of pearl, ivory or exotic hardwood. These presentation revolvers were supplied in elaborate fitted cases made of rosewood or mahogany with inlay and accessories to match. In late 1849 Colt went on a world sales trip, personally presenting his revolvers to European heads of governments, potentates, and ministers. Her Majesty Queen Victoria's consort, His Royal Highness Prince Albert, received presentation engraved Dagoon and Navy revolvers, as did His Royal Highness the Prince of Wales. That this tactic worked is attested by the fact that the Sultan of Turkey was so enamored of the pair of cased revolvers he received that he subsequently ordered 5,000 Colt revolvers and awarded Samuel Colt an order of Turkish nobility. Similarly, Lord Palmerston (1784–1865), the British Prime Minister, wrote a glowing letter of thanks to Colt after receiving a similar gift, providing the company with an early example of product endorsement. Samuel Colt's gift for marketing was a trait that he would continue to nurture during his lifetime.

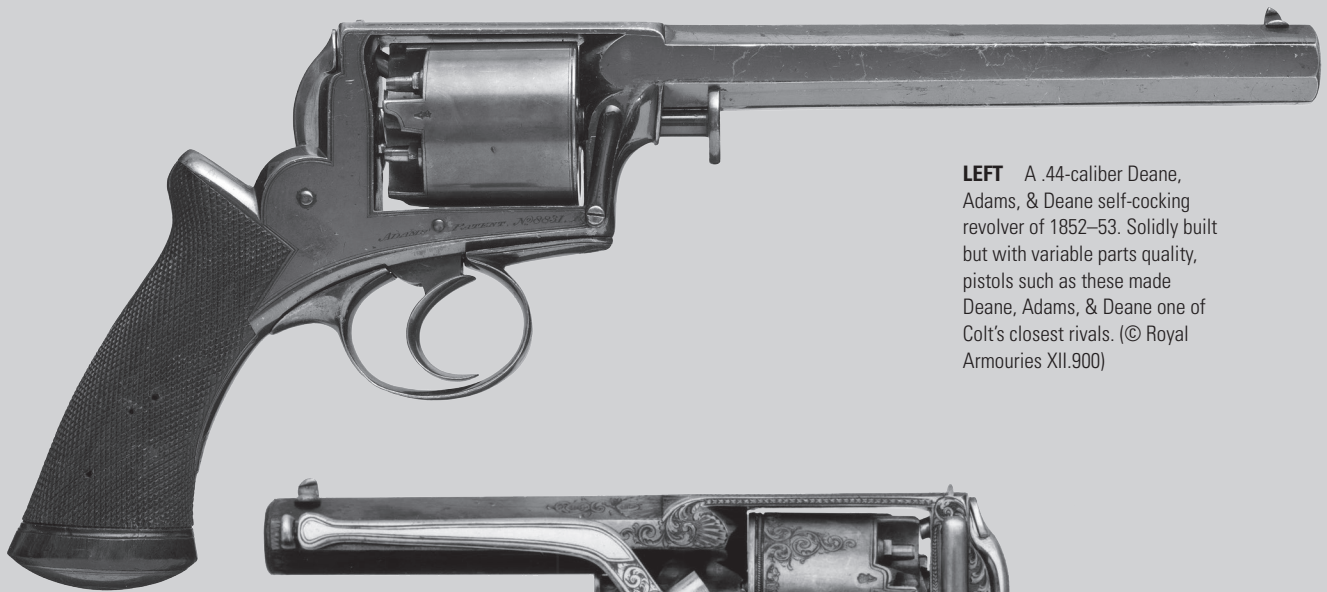
In 1851, Colt visited London to exhibit his revolvers at the Great Exhibition at Crystal Palace, and also at the invitation of the Institute of Civil Engineers to present a paper on "The Application of Machinery to the Manufacture of Rotating Chambered-Breech Firearms." Colt was riding the crest of a wave, for despite having several very good rivals, his revolvers had been particularly well received at the Great Exhibition, while in the United States his lawyers had just won a court case against patent infringement by the Massachusetts Arms Company, which provided the Colt company with unprecedented publicity and reinforced legally the hold that Colt had over the American revolver market. On his return to Connecticut, Colt purchased over 200 acres of land in order to establish a new state-of-the-art manufacturing plant; and he further decided that in order to meet expanding demand from Europe, he would open a London factory. A three-story

Colt's British rivals

Whereas in America, Colt more or less held the revolver marketplace captive, his later patents did not apply in Great Britain. There, his rivals were all producing good-quality revolvers, some of which were arguably of better design than his own. Colt's prime competitor was Robert Adams (1809–80), who had manufactured a large, .43-caliber solid-framed revolver with a top-strap that provided greater strength than the Colt and a double-action trigger that both cocked and locked the mechanism when the trigger was pulled back. On the face of it, Adams' revolver looked a strong competitor, but in tests by the Board of Ordnance in August 1854 it proved deficient, lacking power, the chambers holding only 14 grains of powder, and the self-cocking mechanism being unreliable. Indeed, one British officer had been fatally injured when his own revolver discharged accidentally (Rosa 1988: 43). Most examples

also suffered from poor internal component tolerances that meant parts were not always interchangeable. Other makes, such as Webley and Kerr, all had positive attributes and the Tranter, a modification of the earlier Adams design, was arguably the best of the bunch.

However, it was an improved Adams model, the Beaumont-Adams, introduced in 1856, that could have proven the most serious Colt competitor during the Crimean War as it rectified most of the shortcomings of the original revolver; 100 were rushed to the Crimea, alas, with no cartridges because, as the Board of Ordnance cheerfully pointed out, "none had been applied for." In use the Beaumont-Adams would prove solid and quite dependable, albeit suffering from the usual lack of internal precision and varying percussion nipple sizes which caused problems with caps.



LEFT A .44-caliber Deane, Adams, & Deane self-cocking revolver of 1852–53. Solidly built but with variable parts quality, pistols such as these made Deane, Adams, & Deane one of Colt's closest rivals. (© Royal Armouries XII.900)



RIGHT An engraved Adams revolver, improved and made by William Tranter of London in 1853. The double-spur trigger both cocked and fired the revolver. (© Royal Armouries XII.4671)

OPPOSITE A rare engraved Colt Model 1851 Navy manufactured in the London factory. Thousands of Model 1851 revolvers produced for the British Army during the Crimean War were left in store when the war ended in March 1856. This coincided with the final shipments of Colts being sent from the factory, some 24,000 having been supplied in total. The following year, Colt sold off the London factory premises and machinery and production ceased, although a Colt Agency remained in London until 1913. Many of those unsold revolvers remained in store in the Tower of London for years afterward and were eventually sold off at public auction. It is somewhat ironic that hundreds were subsequently purchased by agents working for the Confederacy and were to appear in the hands of Confederate soldiers on the battlefields of the Civil War. (© Royal Armouries XII.1434)

building in Pimlico was leased and production began on January 1, 1853, with most pistols initially being assembled from parts brought in from the United States. By early the following year Colt revolvers were being manufactured on imported American machinery, there being nothing available in England that could machine to the precise tolerances required. The London factory employed 200 people and the most skilled could earn an astonishing £1 per week, equivalent to £640 (\$972) today.

To finance this production, Colt badly needed more European orders. Once again, fortune favored him as trouble was brewing somewhere else in the world. The declaration of war between Great Britain and Russia in October 1853 placed Colt right at the heart of events, for his London factory was about the only one able to supply large numbers of revolvers at short notice to the British Army troops destined for the battlefields of Crimea. In March 1854 he was asked to supply 4,000 .36-caliber Model 1851 Navy revolvers at £2.10/- each (£209/\$317 today). On August 2, 1855 he received a further order for 9,000, plus Eley percussion caps and a new foil-wrapped cartridge that was more resistant to weather and handling than the old skin-wrapped cartridges. All were supplied with spares, flasks, and molds and the top barrel flat was marked "Address. Col. Colt, London." Military revolvers were inspected at the Tower of London and the inspector's mark, usually a crown with a numeral underneath, was stamped onto the grip. A broad arrow and "WD" acceptance stamp was usually, but not always, put on the left breech flat just forward of the barrel wedge.

COLTS IN THE CIVIL WAR

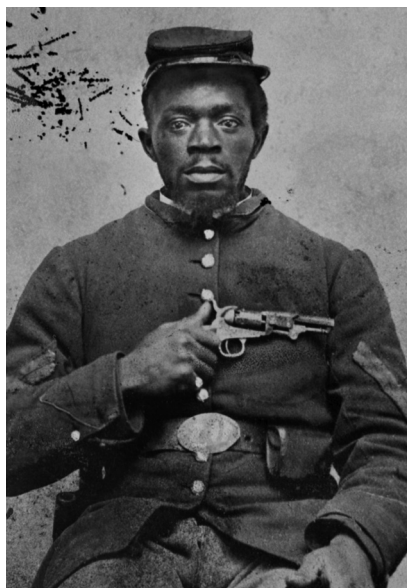
When the Civil War began in April 1861, there was a scramble by both North and South to acquire sufficient arms to equip their rapidly expanding armies, although the main requirement was for longarms for the infantry. For the Federal government this was a matter of expanding production in existing armories and looking to some of the larger commercial manufacturers to produce smaller quantities of non-standard arms, the rifles supplied by the Sharps Manufacturing Company being an example. The demand for handguns was far less pressing, as the regular Army soldiers who required them, predominantly cavalymen, Navy personnel, and officers, were already mostly equipped with some type of pistol or other. For the Confederacy the situation was somewhat more complex, as the South did not generally have access to the industrial plants of the Union and firearm manufacture was fairly small-scale compared to that in the North.

Thousands of volunteer units were raised, however, and for these men arms shortages were critical. In particular, there had been no provision made for the issue of revolvers, and officers and men frequently joined the ranks carrying their civilian-purchased sidearms (in many instances this applied to their longarms as well). There was naturally a near-limitless demand for revolvers which could not be met by any single manufacturer. In the wake of the expiry of Colt's patent in 1856, the company's grip on the percussion-revolver market had relaxed and there was inevitably a



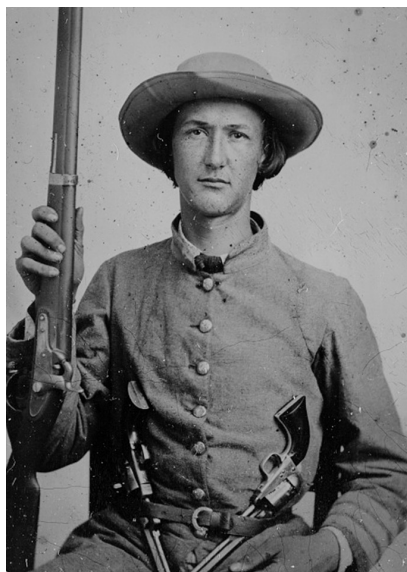
RIGHT A Union sergeant sporting two revolvers in his belt. One appears to be a Model 1851 Navy, the other a Dragoon. As so often occurs, this image has been reversed. (Library of Congress)

FAR RIGHT A black infantry corporal clutching what might be a shortened Colt Model 1851 Navy. It is possible that it is a copy, such as a Manhattan; owing to the reversal of the image, a makeshift repair to the frame can be seen, possibly due to loss of the barrel wedge. (Bettmann)



RIGHT An unknown Confederate soldier with a "Baby Dragoon" revolver in one hand and a fearsome-looking "Arkansas Toothpick" fighting knife in the other. (Library of Congress)

FAR RIGHT A Confederate infantryman with a .69-caliber US Model 1842 musket and a pair of Colt Model 1851 Navy revolvers in his belt. (Library of Congress)



marked increase in the number of competitors who began producing arms of comparative quality and, in some instances, better design. Colt continued to produce revolvers as quickly as possible and his elegant New Model Army in .44 caliber became popular, although sales never eclipsed those of the Colt Model 1851 Navy.

As the Civil War progressed, a change in military tactics, forced by the general introduction of accurate, rifled longarms, meant that the role of the cavalry, hitherto the battering ram of the Army, began to change. Frontal attacks on infantry formations proved suicidal so the cavalry role transmuted into more scouting, reconnaissance, and behind-the-lines guerrilla activity. In close combat, the cavalry saber usually proved useless, its reach being far less than that of a revolver bullet, and the pistol was the



FAR LEFT An unknown Union cavalryman poses with his cavalry saber, a Colt Model 1860 Army revolver, and an unidentified cavalry carbine. (Library of Congress)

LEFT A US Cavalry trooper holding a .44-caliber Colt Model 1860 Army revolver, with what seems to be another thrust into his waist-belt. He holds a Pattern 1860 cavalry saber in his other hand. As so often occurs, this image has been reversed. (Bettmann)



FAR LEFT A youthful Jesse James, well equipped with revolvers, 1863. A reverse-image Colt Model 1860 Army is in his left hand. (Photo by Underwood Archives/Getty Images)

LEFT Private Anthony Holland, K Company, 10th Virginia Cavalry. A new-looking Colt Model 1860 Army revolver sits on his stomach, the flapped holster for which is just visible on his hip. He rests a fearsome-looking "Arkansas Toothpick" fighting knife on his shoulder. (Library of Congress)

The Civil War, 1863 (overleaf)

As the war progressed, the role of the cavalry changed gradually from that of a battering ram to one more suited to skirmishing, scouting, and raiding. At times, however, cavalry provided the impetus to take enemy positions where infantry assaults had failed. Here, Union troopers have galloped into a Confederate artillery position, the lead cavalryman using a combination of Colt Dragoon and Model 1860 Army revolvers. Although both revolvers were of .44 caliber, the smaller and lighter Army made carrying more than one far easier – a crucial point when troopers carried up to six revolvers in waist-belts and saddle holsters. The artillerymen were generally helpless if cavalry closed with them, and mainly resorted to revolvers and sometimes loading tools to defend themselves. Here one Confederate artilleryman uses a generic Colt Navy revolver made in one of the Southern arsenals, although many genuine Colts were smuggled into the South by sympathizers during the war.





Civil War competitors

Of the other makes trialled by the US Ordnance Department, the most impressive had been Remington's .44-caliber Model 1858 New Model Army; although it had not been selected for general prewar issue, it was in many respects a better revolver than the Colt. Patented in 1858 by Fordyce Beals (1806–70), it had several advantages over the Colt, the most obvious of which was the strong top-strap that prevented the stretching or bending of the frame that was common to the Colt design. In addition, the cylinder had a simple safety system in the form of milled slots in between each chamber into which the nose of the hammer sat, creating a positive manual safety position. The Remington revolver could be loaded with up to 40 grains of powder and propel a bullet at 1,200ft/sec. Unlike the awkward wedge of the Colt, the cylinder was retained by a combined rammer/axis pin that could be unlatched quickly to enable the cylinder to be removed and a loaded replacement inserted, although it should be stressed that those revolvers later purchased by the US Army did not generally come with spare cylinders. The Remington Model 1858 New Model Army was the second-most-purchased model, with 115,557 being supplied to the Federal government; but despite its "model" designation, it was not actually put into large-scale production until 1861.

Many other makes appeared. A very well-made alternative was Whitney's Model 1861 Navy, which bore a striking resemblance to the Remington. This was not a coincidence, for it was designed by none other than Fordyce Beal, and was a .36-caliber, 7½in-barreled model. More than 30,000 were issued to the Federal forces.

Savage's .36-caliber Model 1858 and a later incarnation, the Model 1861 Navy with its unusual "figure-eight" double-action trigger mechanism, were reliable weapons. Some 20,000 were ordered; a little over half were supplied to the Federal government, but many of the rest found their way into the hands of Southern sympathizers.

The Starr was a large-framed, solidly constructed double-action .44 (but also made in .36 caliber as a Navy model) patented in December 1860, just four months before the American Civil War broke out. It was a serviceable arm that was well ahead of its time, having a unique hinged frame not seen in mass-production until the 20th century, and a complex but clever double-action trigger that had a secondary trigger placed inside the rear of the trigger-guard. Bizarrely, it followed Colt's practice of having a slot on the hammer nose to act as the rear sight, which is of little practical use on a



A .44-caliber Remington Model 1858 New Model Army revolver. Arguably a better, stronger design than the Colt, its solid frame and easily removable cylinder won it many admirers. (NRA Museums, NRAMuseums.com)



A .44-caliber Starr revolver, a design that was a decade ahead of its time with its hinged frame, double-action mechanism, and safety catch that enabled it to be carried fully loaded. (NRA Museums, NRAMuseums.com)

double-action revolver. In fact it proved too complex for a military arm, although some 20,000 were manufactured, and it was later modified to single-action operation. It remains today a greatly underrated revolver.

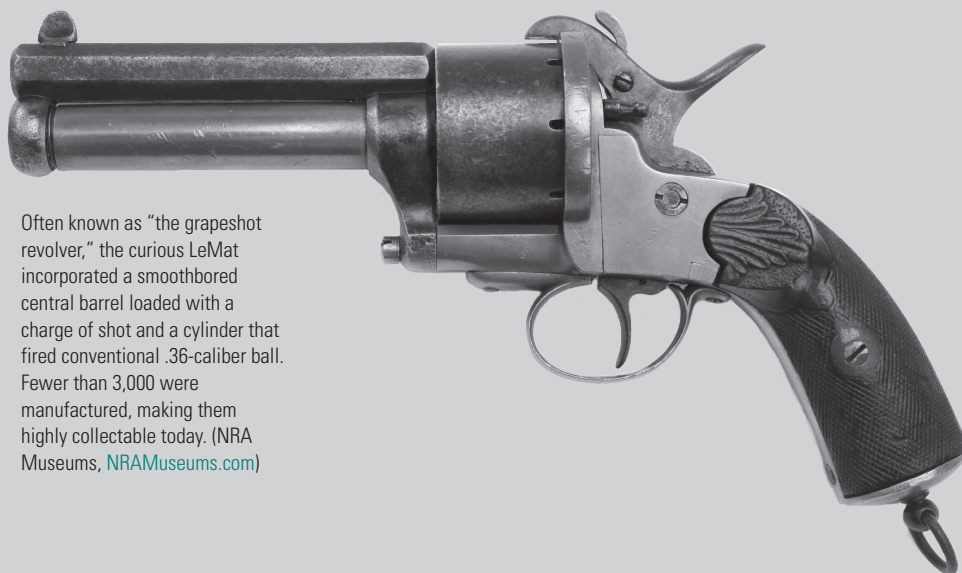
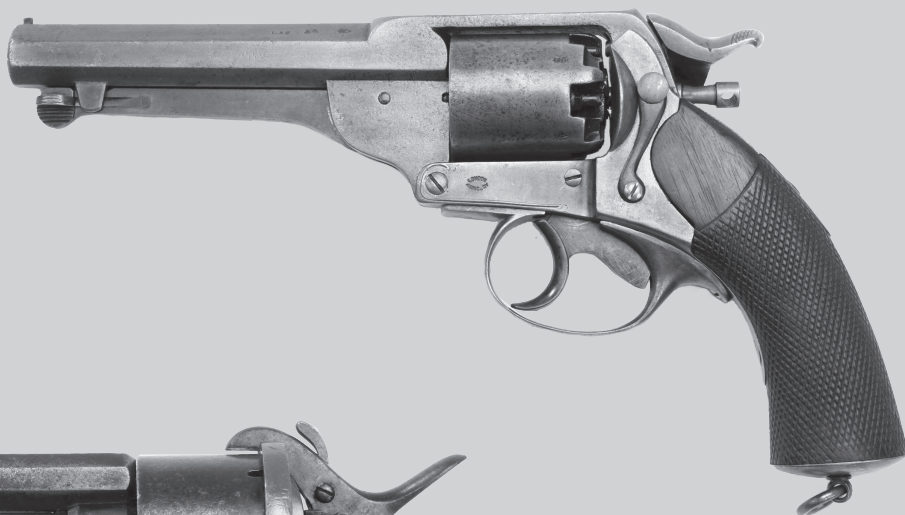
Kerr's Model 1855 was also a very unusual revolver. James Kerr was Robert Adams' cousin and had been a foreman with Deane, Adams, & Deane in London. He then began working for the London Armoury Company, best known for its production of very high-quality commercial Enfield Pattern 1853 rifle-muskets. The Kerr Model 1855 was unique in utilizing a sidehammer, back-action lock identical to that of contemporary rifles and single-shot pistols, and the earliest models had a curious double-action mechanism. Slightly worrying was the fact that if the hammer was left down and the trigger pulled, the cylinder would rotate but not cock the hammer. This was expensive to manufacture and quite unnecessary, so a later single-action design was produced.

Nor was percussion the only method of ignition available, as witnessed by the singular revolver design of French gunsmith Casimir Lefauchaux (1802–52) and his son Eugène (1832–92). Although visually it was of a standard open-framed pattern, it

employed the new pinfire metallic cartridge using a bored-through cylinder and hinged loading gate, patented in April 1854, a year in advance of the Rollin White patent. The design was at least a decade ahead of any of its rivals and was to become the first metallic-cartridge revolver to be adopted for military service. The Union Army ordered almost 12,000 and the Confederacy up to a further 3,000. Its biggest shortcoming was the difficulty in obtaining supplies of ammunition; revolvers often being issued with no cartridges and being pinfire, there was no means of hand-loading in an emergency.

Without a doubt, however, the oddest revolver made during the Civil War was the LeMat, designed for mounted troops and combining a .42-caliber, nine-shot cylinder and rifled barrel with a 20-gauge smoothbore barrel, centrally mounted in the axis of the frame. During the war a smaller version with a confusingly non-regulation .35-caliber cylinder and 28-gauge barrel served to complicate ammunition supply further, as owners had to cast their own bullets. The LeMat was never particularly successful and fewer than 3,000 were manufactured in total, but today they command astronomical prices in collecting circles.

The sidehammer Kerr Model 1855 was made by the London Armoury Company in both .36 and .44 caliber. Virtually the entire production capacity of the London Armoury Company was purchased by the Confederacy and this included all of their revolvers, some 11,000 of which were manufactured: more, in fact, than the combined total produced by all of the Southern armories during the Civil War. (NRA Museums, NRAMuseums.com)



Often known as "the grapeshot revolver," the curious LeMat incorporated a smoothbore central barrel loaded with a charge of shot and a cylinder that fired conventional .36-caliber ball. Fewer than 3,000 were manufactured, making them highly collectable today. (NRA Museums, NRAMuseums.com)

weapon of choice. Some 20 percent of soldiers served in cavalry units during the Civil War and the demand for revolvers outstripped supply. As most issue carbines were single-shot, the cavalymen relied on their revolvers for firepower, and these weapons were often carried in some quantity. One unnamed Federal cavalryman wrote that: “We were all festooned with revolvers. I carried four of Colt's, two in my belt and two on my saddle holsters but this was by no means an excess. Some of my compatriots carried six because we were determined in a fight not to be found wanting” (quoted in Minnesota Board of Commissioners 1932: 183). The Union Army's *Manual for Cavalry*, dated 1863, includes very clear instructions as to how a revolver should be correctly used in a cavalry fight:

In aiming ... the trooper should rise a little in the stirrups and incline the body a little to the front; the arm should be half extended and the body turned in the direction of the object aimed at. At first, one chamber of the pistol should be discharged by each trooper, and great care should be taken to guard against frightening the horses. (Quoted in Farrington 2004: 30)

The reality was somewhat different:

We met the rebels head on and such was the confusion that it was hard to know who was your enemy and who was a compatriot. I discharged my revolver at arm's length at a figure in gray and he toppled onto the neck of his mount before being lost in a whirl of dust and fleeing horses. I know not at whom I fired beyond that, or what time had elapsed but when all fell quiet I found that both my pistols were emptied and I had bullet holes in my holster, through my boot heel and my canteen. There were five rebels who would not trouble us anymore and many others who must have taken wounds but who had vanished from the field. (Quoted in Minnesota Board of Commissioners 1932: 192–93)

CIVILIAN COLTS AFTER THE CIVIL WAR

Many Colt revolvers were sold off as surplus to the public and former soldiers, many of whom joined the mass migration west. This inevitably led to a proliferation of well-armed men roaming the plains, few of whom had a means of earning a livelihood and to whom robbing and bushwhacking became second nature. The towns springing up in the West became renowned as lawless places and a new breed of man – the gunfighter or *pistoleer*, who earned a living from his ability with a handgun – began to proliferate, working on both sides of the law.

Although the exploits of these postwar gunfighters have been blown out of proportion and much embellished over the years, there is no denying that for a period of perhaps 30 years, they achieved greater notoriety than any other social group in American history. One of the

most famous and well-documented was “Wild Bill” Hickok (1837–76), who used his Colt Navy revolvers with chilling precision when forced to. On July 21, 1865, at Springfield, Missouri, in one of the most-reported gunfights in Western history, he became embroiled in an argument over an alleged gambling debt with a cowboy called Dave Tutt. Hickok went into the street to face Tutt down in a rare example of a formal street shootout. Hickok carried a Colt Model 1851 Navy and stopped some 75yd from Tutt – well beyond what was considered a practical range for a revolver. He called: “Dave, I’m here,” then cocked his Colt and holstered it. Unlike in Hollywood shootouts, the two men faced each other in a traditional target-shooting, sideways-on stance when revolvers would be leveled at arm’s length and fired one-handed. Hickok had no intention of missing at that range, however, and when both men drew, he steadied his right hand on his left forearm. Both fired simultaneously, Tutt missing but Hickok’s bullet hitting Tutt between the fifth and seventh ribs. Tutt shouted “Boys, I’m killed,” ran across the porch of the courthouse then back into the street where he expired (Connelley 1933: 84–85). It was a perfect example of a man using a revolver with which he was utterly familiar, along with the application of steady nerve, and it showed the accuracy that a Colt Navy could achieve in skilled hands.

Although throughout the 1860s most men still carried percussion or transitional revolvers such as the Richards-Mason conversions, after 1873 the new cartridge revolvers rapidly supplanted them, foremost among which were the single-action Colts. Termed the “Model P” by the factory and the Peacemaker by almost everyone else, it was rugged and simple and it seemed to suit the requirements of almost everyone who needed a handgun: soldier, lawman, ranch-hand, cowboy, farmer, or saloon-keeper – the list is endless. When it was needed, the Peacemaker was a faster revolver to draw and fire than most of its rivals, save possibly the new Model 1875 Remington which had been introduced specifically to compete and bore a remarkable similarity to the Peacemaker, which was by no means accidental. Nevertheless, the natural grip shape of the Peacemaker and angle of the hammer spur meant that with practice the Colt pistol could be drawn and fired in about a half-second.

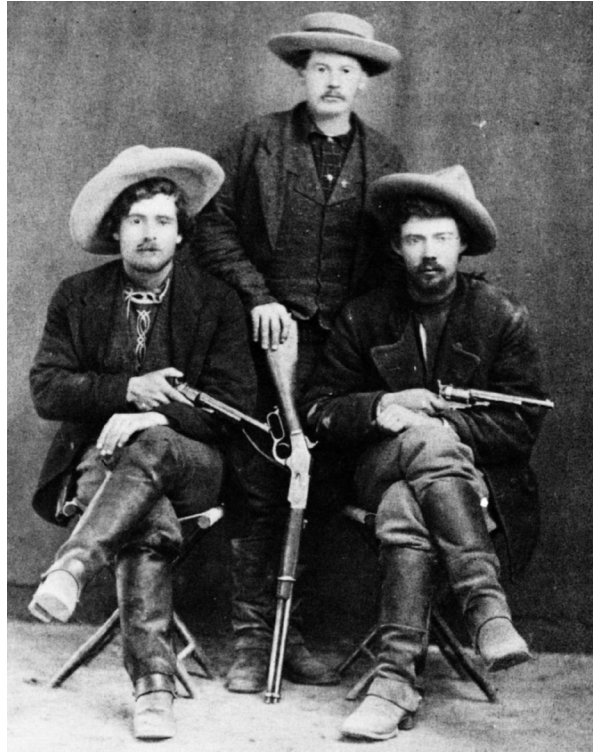
Of course, hitting the intended target was another matter. One newspaper, *The Kansas Weekly Gazette*, reported in 1882 that a gunfight involving four men spilled from a saloon into the street, but after they had emptied their revolvers at each other, no-one was actually hit, although all were made to pay for the resultant bullet damage to the bar. When real gunfights erupted

“Wild Bill” Hickok, in plains buckskins, with his pearl-handled Colt Model 1851 Navy revolvers prominently displayed. These are the pistols he used for his July 21, 1865 duel with Dave Tutt in Springfield, Missouri. (Library of Congress)





ABOVE LEFT Three Kansas “cowboys” pose with one Peacemaker and two Single Action Army revolvers. Their new clothing and lack of cartridges in their gunbelts indicate that they were possibly equipped by the photographer’s studio. (Kansas State Historical Society)



ABOVE RIGHT A rare image of three cowboys in New Mexico. The two seated are holding Richards-Mason-conversion Colt Model 1860 Army revolvers. The rifle is a Winchester Model 1873. (Museum of New Mexico)

and professional gunfighters like Hickok were involved, however, the results were usually quick and predictably fatal. After the OK Corral gunfight on October 26, 1881 in Tombstone, Arizona, the three Earp brothers and “Doc” Holliday, two of them using single-action Colts, fired a total of 17 shots in under a minute, scoring multiple hits on their three targets, all of whom died. Neither the Earps nor Holliday received more than a scratch from the return fire. At least one gunfight victim’s fate was recorded in stone on a headstone in Tombstone, on which is carved: “Here lies ----- who died a violent death. He was shot by a Colt’s revolver, old kind, brass mounted, and of such is the kingdom of heaven” (quoted in Haven & Belden 1940: 149).

COLTS IN MILITARY HANDS AFTER 1865

By the end of the Civil War, the shortcomings of the various models of revolver had been thoroughly explored by both sides. The two major competitors, Colt and Remington, had served their part well enough, but in terms of technological advancement, nothing had changed much since the first introduction of the Paterson revolvers. Percussion revolvers could prove temperamental in use and were slow to reload at the best of times. The same could not be said of rifles, which had been transformed from simple single-shot muzzle-loaders to cartridge-loaded repeaters in the space of five years. This had not gone unnoticed, an anonymous correspondent writing in the *Army and Navy Journal* on March 16, 1867:

It is passing strange that while so much is being done in the way of perfecting the rifle and carbine, we hear nothing of an improved army pistol ... Colt's and Remington's army pistols are still the best we have for the service: but we greatly need a better weapon of this kind. We want a pistol to use the metallic cartridge of the caliber to be adopted for the new carbines. Everyone in the army knows the great inconvenience of loading and capping ... whilst in motion on horseback and also the great number of pistol cartridges (of paper or skin) that are destroyed in the cartridge box, and in loading.

While the .44 Remington New Model was often rechambered for a .46-caliber rimfire cartridge, many of the Colts were being converted to shoot the new centerfire ammunition.

Trouble between settlers and Native American tribes continued to escalate after the Civil War, as thousands of men and their families flocked west to find a new life. The US Cavalry were in the firing line, attempting to preserve some sort of neutrality but in reality acting as the fighting arm of the US Government. In the immediate postwar years, there were tens of thousands of military-issue Colt revolvers in circulation, a large proportion of which were retained in military arsenals for further service. These percussion guns were refurbished and reissued to Army units serving on the frontier, which was gradually proving to be the latest American battleground. By the early 1870s they were armed with either .45-caliber Colt Single Action Army revolvers, the .44-caliber Smith & Wesson No. 3, or the new, modified .45-caliber Smith & Wesson Schofield, all of which had their admirers and detractors. An Army report of 1872 stated the superiority the Smith & Wesson had over the Colt was "the greater rapidity of ejecting the empty cartridges in the Colt's, the number of parts is less, they are more simple and stronger ... it can be dismounted for cleaning by drawing one screw ... I have no hesitation in declaring the Colt's revolver superior in most respects" (quoted in Farrington 2004: 140). As a result, some 6,000 Smith & Wesson Schofields were ordered and they served alongside the Cavalry's issue Colt Single Action Army revolvers. In reality, field use in the dusty climate showed that the mechanism of the Smith & Wesson tended to clog much more easily than that of the simpler Colt, and speed of reloading was not usually of particular importance.

George Armstrong Custer and his scouts during the Black Hills Expedition of July–August 1874. All three Arikara scouts are holding Colt Single Action Army revolvers, although whether these were Army issue or provided for the photograph is impossible to say. (Montana Historical Society)



Two Nez Perce Indians in Montana in 1871. The revolver is a Colt Model 1860 Army, its grips decorated with brass tacks. (National Portrait Gallery, Smithsonian Institute)



It was the Colt that bore the brunt of the fighting on the plains, however. Sergeant (later Captain) Robert Carter commented that: “oftimes close fighting ensured that we relied on our Colt six-shooters, which at close ranges would bring down an Indian pony. But the Indians could shoot their bows with unerring accuracy from horseback, a feat we could not match” (Carter 1926: 65). As it had proven to be throughout its short history, the trooper’s handgun was a last-ditch weapon in battle, useful only when the enemy were so close that the slow-firing single-shot Springfield carbines or rifles were no longer viable. Even then, the hard-hitting Colt was of little use when its owner was attacked by vastly superior forces, as was shockingly illustrated on July 25–26, 1876, when Colonel George Armstrong Custer’s 7th Cavalry were overwhelmed by Sioux warriors. In a grisly postscript, many of the Native Americans involved later recounted that as the troopers fled in panic, some used their Colt revolvers to shoot themselves rather than be taken alive – surely the last purpose for which Samuel Colt would have expected his revolvers to have been used.



US Cavalrymen with Apache scouts, pictured in Arizona c.1880. All the carbines are regulation Trapdoor Springfields, but the Colt Single Action Army revolvers are all being carried in open civilian or cut-down Army holsters. (Arizona Historical Society)

The US Army's replacement of the .45-caliber Colt Single Action Army revolver with the .38-caliber Colt Model 1892 Double Action in 1893 was perhaps understandable. By then the Single Action Army was old fashioned; it was slow to reload and – mechanically at least – had been eclipsed by the top-break double-action revolvers of Smith & Wesson; and the introduction in 1880 of Smith & Wesson's new .38-caliber Double Action gave further impetus to the Army to review its aging sidearms. This led to the US Cavalry withdrawing the Single Action Army, replacing it with the .38-caliber Colt, the always contentious argument being that the higher-velocity but smaller bullet was just as lethal as the big, slow .45 bullet.

During the brief Spanish-American conflict of 1898 the issue revolver for the US cavalry was the Model 1892, but the fact was that some men – in particular the 1st US Volunteer Cavalry (the “Rough Riders”) – clearly felt that being separated from their venerable Colts was a bad idea, and there is some evidence that they carried the .45 Artillery Model. In his book *The Rough Riders* (Roosevelt 2004), Theodore Roosevelt mentions the effective use of revolvers several times, although he is frustratingly non-specific about the model.

During the Philippine-American War (1899–1902), John Pershing wrote a harrowing account of how inadequate the US Army's weapons, both the .30-40 Krag rifle and the .38 revolver, proved to be:

Two infantry companies were carefully advancing towards a cotta through the six-foot high cogon grass. Suddenly a powerfully built Moro jumped from hiding and charged swinging a kampilan like a scythe ... before charging into the main skirmish line of men some 30 to 40 yards away. It took seven bullets to his torso to finally stop him in his tracks. (Pershing 2013: II.187)

As a result, a quantity of Colt Single Action Army Artillery Model revolvers were hurriedly shipped to Manila. If any proof were required that size matters where killing power was concerned, it was in the reissue of these venerable .45 caliber revolvers.

SHOOTING COLTS

The author has been able to shoot all of the Colt percussion revolvers as well as the later cartridge models, and it has been interesting to note that despite the introduction of modern materials and automated production processes, the latest incarnations of the Colts do not appear to perform any better than the originals. Indeed, some regular shooters maintain that the modern Italian-manufactured percussion examples are inferior to the originals in both function and durability. This is entirely subjective, of course, and hard to substantiate as few shooters today are prepared to shoot to destruction an original revolver that is worth hundreds, if not thousands of dollars to perform long-term comparisons.

For any percussion revolver, the loading process is of course glacially slow. While holding the revolver in a vertical position with the hammer half-cocked, a measure of powder must be poured into each cylinder. A lead ball or conical bullet is then placed on the mouth of each chamber and rammed down firmly. Some shooters using lower-powered target loads fill the space between powder and ball with an inert material such as corn meal. Once the bullet is seated it is usually wise to seal each chamber with grease, partly to provide lubrication for the bullet but also to close the mouth of the chamber and reduce the chance of chain-fire. Then the percussion caps have to be placed on the nipples – at best a fiddly job but doubly difficult if one's hands are cold or wet. Attempting to perform any of these operations in the dark, wet, or on horseback really doesn't bear thinking about.

Certainly, both original and reproduction Colts share the same idiosyncratic levels of accuracy which are due not so much to their quality but to the method of assembly. When pushed home, the barrel wedge can permit the barrel to be fractionally misaligned to one side or the other

The Philippine–American War, 1899–1902 (opposite)

Fighting the Filipino tribesmen, commonly referred to as the Moro, was a nerve-racking business, as they were masters of the local topography and used the thick tropical grasses and vegetation to their advantage to plan ambushes. The Moro were fearless of death, believing it led to a new paradise, and they often used drugs to numb their physical senses. The US soldiers were armed with .30-40 Krag rifles, but in close-quarter fighting rifles were at best an encumbrance and even the .30-caliber bullet did not always stop a Moro. What was required was a powerful revolver, but against all logic the Americans were initially issued with the .38-caliber Colt Model 1892 Double Action. Its small bullet proved ineffectual and supplies of old .45-caliber Single Action Army Artillery Model revolvers were hurriedly shipped out to the Philippines. Here an officer readies his Colt as a charging tribesman armed with a razor-sharp *kriss* fighting knife tries to close with him. Others follow behind with *budiak* spears and *barongs*: deadly, machete-type knives. The US Army was so concerned as to the ineffectiveness of its weapons that it subsequently adopted the Colt Model 1911 semiautomatic pistol chambering the powerful .45 ACP cartridge; the underperforming Krag rifle was also replaced.





The working parts of a stripped Model 1851 Navy. Aside from physical damage, there is little that cannot be replaced by an owner with a screwdriver. (Dr. Robert Maze & Dr. Laurie Landau)

depending on how accurately machined or worn the slots are in the axis pin and barrel assembly. This often means the barrel is installed fractionally off-center, giving a point of impact that will be different to the last time the revolver was fired; and this is not helped by the rudimentary sights, namely a small brass front sight and slot-in-the-hammer rear sight. Nevertheless, once these factors have been allowed for, the revolvers are actually quite accurate, producing offhand groups at 25yd of around 3in, which is perfectly acceptable for personal defense albeit not quite Bisley standard.

A problem acknowledged at the time and one that still afflicts today's Colt reproductions was the propensity for fired percussion caps, which often split once struck, to drop down into the channel that the hammer sat in, effectively locking up the action. There is no quick method of clearing such a jam, which was why those few men whose lives depended on their pistols carried two or more, but few ordinary men did. One longtime Western cowboy noted: "I punched cows from '71 on and I never yet saw a cowboy with two guns. I mean six-shooters. Wild Bill carried two guns and so did some of the other city marshals, like Bat Masterson, but they were professional gunmen themselves, not cowpunchers like us" (quoted in Abbott & Smith 1942: 51).

The big Walker revolvers are, even by modern standards, literally quite a handful and their weight requires two hands for accurate shooting. With a full powder charge they can recoil quite noticeably, although black powder, unlike modern nitrocellulose powder, has a much softer recoiling action. If shooting one-handed, the curve of the grips on all of these Colt percussion revolvers allows the gun to slide vertically in the hand, but it is controllable and not uncomfortable. The accuracy of a Walker or a Dragoon is comparable with that of the smaller revolvers, but because of the considerably higher muzzle energy, range and bullet penetration are substantially greater. Shooting a Dragoon with stock fitted makes a body hit on a target at 100yd quite possible, although with ordinary (as opposed to adjustable) sights, allowance has to be made for the trajectory of the bullet.

The Model 1873 Single Action Army addressed most of these accuracy problems, being both cartridge-loaded and having a solid frame; although the hinged loading gate makes the process slow, it is not a problem as such. (On average, it took twice as long to reload the .45in Colt, at around 1 minute 50 seconds, compared to the hinged self-ejecting Smith & Wessons.) Few revolvers sit so naturally in the hand as the Single Action Army, however; the grip shape seems to suit everyone and trigger pull is a



reasonable 7–8lb, easily modified by a competent gunsmith to a much lighter pull, providing a smoother let-off and improved accuracy. The substantial front sight and grooved top-strap permit steadier aiming than the old percussion models.

It might be useful here to debunk a few myths about the “.45.” It is not purely a slow-shooting, close-range sidearm, useful only for brawls and point-blank gunfights. It points instinctively, and with properly hand-loaded ammunition can produce 1in groups at 25yd and can consistently hit a 12×12in target at 70yd. Purely as an experiment, the author – who would not claim to be a gifted pistol-shot – using hand-loaded ammunition with a near-maximum powder charge, could place all six shots into the torso of a man-sized target at 100yd.

Although steady and careful two-handed aiming is the best way for the ordinary shooter to hit any target, the single-action revolver in the hands of an expert can be fired at a breathtaking speed, faster even than an automatic weapon. The legendary trick-shooter Ed McGivern (1874–1957) could draw and fire a shot in three-fifths of a second and hit a man-sized target at 10yd. There has been much controversy over the ability of the Colt to be fired by fanning the hammer, i.e. using the heel of the left hand to cock the gun while the right keeps the trigger pulled. This



The open loading gate of a Colt Single Action Army. This was probably the single biggest drawback to the design. (Author's Collection)

action required a rock-steady grip of the revolver and is mechanically hard on the components, often damaging the locking bolt due to the speed of rotation of the cylinder. McGivern used the technique on a slightly modified Colt .45, firing five shots in one and one-fifth seconds. He could also draw from a holster and repeat the feat in one and three-fifth seconds. The Bisley model with its more curved grip is actually steadier to hold and permits quicker recovery from recoil, while the lower and wider hammer spur aids cocking, but it is no more inherently accurate than the ordinary single-action variants albeit providing a steadier platform for accurate shooting. As far as the author is concerned, the Bisley does not have the same natural feel in the hand as the Peacemaker, nor is it quite so instinctive to shoot, although this too may be entirely subjective.

In fact, the usual techniques of proper aiming and shooting can be dispensed with if the shooter is very familiar with his revolver. Although it takes some practice and nerve, placing the fore (trigger) finger parallel along the line of the frame or cylinder and using the second (middle) finger to work the trigger effectively creates a “point and shoot” stance, whereby aiming is quite instinctive and the sights of the revolver do not need to be used. It is inherently accurate as the brain automatically aligns one’s finger on the intended target, and it is certainly possible to hit a man-sized target repeatedly at 25yd with this method. Several gunfighters espoused it but they were doubtless identifiable by the burned tips of their forefingers, which is the result of laying the forefinger alongside the gap between the cylinder and throat of the barrel, where it is struck by flash from the igniting charge. In practice, as is so often the case with mechanical objects, the performance of these revolvers, or the lack of it, can usually be ascribed to the user rather than the gun itself, and the Colts are usually far more capable than those who shoot them.



IMPACT

The dawn of mass-production

COLT'S TECHNICAL INFLUENCE

In pure engineering terms, Samuel Colt was without doubt a man with a flair for mechanics, but he was no John Moses Browning. He was astute enough to make use of many of the extant revolving-pistol designs but with the added advantage of having the latest available technology at his disposal. Inventions in any field are seldom the result of a single “eureka” moment, but are generally the cumulative result of a series of incremental steps in line with what is technically possible at the time. These changes were often the result of inventions unconnected with the primary issue, one example being the introduction of percussion caps, which came about not because of experiments to invent a better priming compound but to find a propellant more efficient than black powder. These inventions were not the random result of solitary inventors working in cobwebbed cellars, as had often been the case until the 19th century, but a part of the new international world of scientific and technological collaboration made possible by modern communications such as the telegraph, the printing press, and rapid transport by railroad. Thus it is not purely coincidental how often these ideas came into being apparently simultaneously: Berdan's and Boxer's cartridges are a case in point. It was the unsung and largely anonymous work of dozens of earlier and contemporary inventors and gunmakers that enabled Samuel Colt to put into production a revolver that could not have worked prior to 1820, because the technology required to do so simply didn't exist.

It is reasonable to say that Colt's idea for a revolving cylinder was not radically new and it was arguably only a matter of time before someone else came up with the same idea. However, he was the first to apply all of the available technologies to the new manufacturing processes that were then available in America in the mid-1800s, and this enabled him to



Colt's East Armory building in Hartford, Connecticut. Samuel Colt examined in minute detail all of the processes involved in the existing production methods pioneered by gunmakers such as Eli Whitney. He understood completely that if his guns were to be produced cost-effectively and in large numbers, there had to be not just partial, but total interchangeability of parts, something that hitherto had never been done. In pure engineering terms much of the machinery to do this simply did not exist, so it meant designing and manufacturing special lathes, milling machines, grinders, and woodworking machines that could faultlessly repeat every machining action thousands of times over. Colt also devised a system of master gauges or patterns, which were used to ensure that each part conformed to its exact drawing specifications, and he appointed inspectors whose job it was to ensure that components were regularly checked. Parts that failed represented time and money wasted and Colt ran the factories like military units. (Library of Congress)

become the first in his field. He could not have proceeded with the Paterson design had percussion ignition not existed, nor could he have begun large-scale production without recourse to the newly emergent "American system" of machine mass-production. This is evident from the fact that the small-scale semi-mass-production of Patersons was insufficient to be a profitable enterprise; true mass-production was the only way forward. Colt needed to create new methods of increasing

production while keeping down manufacturing costs.

How novel Colt's approach was is demonstrated by the fact that at the Great Exhibition in London in 1851, in front of an audience of engineers and reporters, Colt disassembled ten revolvers, mixed up the parts, and then reassembled them, cocking and dry-firing each one to prove it worked. The effect this demonstration had is hard to envisage today and after his lecture "On Applications of Machinery to the Manufacture of Rotating Chamber-breech Fire-arms and the peculiarities of those Arms" at the Institute of Civil Engineers later that year, many openly doubted the claims he made. The "American system" was still regarded in Great Britain as at least unworkable and possibly even fraudulent and was the subject of a tremendous amount of newspaper argument and downright hostility. Nevertheless, Colt's lecture proved to be pivotal in promoting the understanding of mass-production processes and resulted in his being given the Institute's highest award, the Telford Gold Medal, in 1852. Indeed, so influential did Colt's work prove that the UK Government launched a commission into improving production methods for regulation firearms, and this led to the opening in 1856 of the modified and expanded Royal Small Arms Factory at Enfield Lock in Essex. By employing the latest American production techniques, including the use of steam-powered machinery, by 1860 production at Enfield had increased from around 300 rifles per week to over 1,700. The production processes that Colt perfected have continued unabated to this day and enable our modern industrial society to function.

COLT'S MARKETING MASTERY

There is no doubt that Samuel Colt had a brilliant organizational brain, but he was also extraordinarily fortunate in his timing, for as he was developing his range of revolvers the California Gold Rush, US-Mexican War, American Civil War, and Indian Wars all occurred within the space of 30 years, and so the demand for his products was at a peak. Where his

unique genius lay was in his promotional abilities, understanding as he did the importance of targeting the influential and the powerful in what today would doubtless be described as “networking.” He also presciently provided examples of his revolvers to retailers such as Freund and Bro. along the burgeoning frontier. They opened a chain of gun-stores as towns were established and the Union Pacific Railroad expanded westward through Colorado, Wyoming, and Utah. They normally had their own shooting ranges behind their stores where guns were available to the prospective purchaser for testing, thus enabling prospective customers to compare function and performance. As a result of this rapid expansion of the railroad westward, people began to travel en masse into territory that was regarded, rightly or wrongly, as highly dangerous. This insecurity was fueled by lurid tales in the newspapers of sudden death and atrocities committed on the innocent, which certainly boosted sales to the Easterners heading west.

Colt’s ability to mass-produce good-quality, affordable guns for “self-protection” was timely but also fulfilled a need during a critical period of American history. Some 80 percent of settlers came from the Eastern states, particularly after the Civil War – and the majority of these had never previously had cause to own a firearm. However, fueled by press reports and the paranoid fear that they could become victims of apparently rampant crime across the frontier, they looked to buy some protection in the form of a gun – and what better than a make they had already heard of: Colt? As a result of his careful advertising Samuel Colt had ensured that by the 1860s, his revolvers were a familiar name to almost everyone. Many new arrivals, believing the dime-novel accounts of endless gunfights and murders, suitably equipped themselves at the first opportunity, one recalling: “Before leaving the train I had prudently strapped to my waist a new (how distressingly new) .45 Colt’s six-shooter, that looked and felt a yard long. The one possession larger than the pistol that left the train with me was the desire to learn to use it” (quoted in Garavaglia 1985: 298).

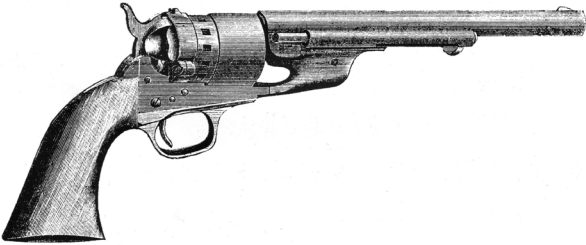
In fact, the violent nature of the West that apparently required such measures was nowhere near the levels that were publicized. In public perception, the West became more dangerous as time progressed and in the postwar years, when the frontier was gradually settled, it was a dangerously lawless place. In truth, this was not the case, as evidenced by the fact that in the

A typical Freund and Bro. early frontier gun-store. George and Frank Freund were German immigrants and moved west after the Civil War. They would have sold and repaired all types of firearms, including Colts. (Library of Congress)



COLT'S,
New Breech Loading
METALLIC CARTRIDGE REVOLVERS.
FOR SALE BY THE TRADE GENERALLY.
—MANUFACTURED BY—
Colt's Patent Fire Arms Manufg. Co.,
HARTFORD, CONN.

COLT'S,
METALLIC CARTRIDGE,
Army Six Shot Revolving Pistol.



.44 Calibre, Weight 2 lbs. 11 oz., Weight of ball 212 grains or 83 to the pound.
The Drawing is one-half the size of the Pistol.
PRICE \$16.

COLT'S,
METALLIC CARTRIDGE,
Navy Six Shot Revolving Pistol.

.36 Calibre, Weight 2 lbs. 11 oz., Weight of ball 140 grains or 80 to the pound.
The general appearance of the Pistol is the same as that of the Army Pistol. See cut above.
PRICE \$15.

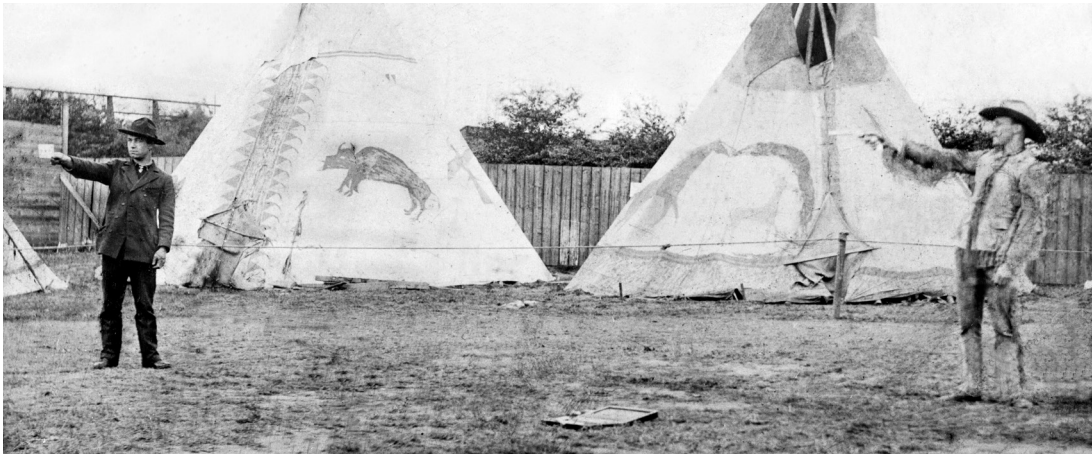
An advertisement for the "Army and Navy Six Shot Revolving Pistols" that are generically known as the Model 1872 or Open Top. (Author's Collection)

place I was ever in. A vast amount of property, easily moveable is daily and nightly exposed without ... even a lock." The trouble, as intimated in the quotation from the newly armed arrival above, was that the proliferation of revolvers encouraged their use. One curious effect was an upsurge in the duel, the two protagonists usually facing each other with revolvers to iron out their differences. This created the nucleus of the later, traditional image of a Western street-gunfight, although the outcome often appeared to be non-fatal because those involved were full of alcohol.

COLT'S CULTURAL LEGACY

In today's multimedia world, it should not be forgotten that through the 19th century, the printed word was all that was available to the public in the form of newspapers, journals, and books. Indeed, the first true Western novel, *The Virginian*, was not published until 1902, but there already existed a long tradition of Western books (one hesitates to call them literature) recounting tales of the West in lurid and usually non-factual detail. These "dime novels" and magazines began to appear just before the Civil War and lasted well into the 20th century. Some writers such as Thomas C. Harbaugh and Frank Dumont wrote pure fiction, but quite a large number of these novels were loosely based around events that did

major five cattle railheads of Kansas there were an average of only three murders per year, far less than in New York or Boston. Considering they were awash with hardbitten cowpunchers carrying revolvers, this is quite a remarkable statistic. In the California Gold-Rush early days of settlement, while fights were commonplace – not unexpectedly in view of the fact that some 300,000 men occupied a relatively small area – the most common weapon used was the knife. Even in the roughest areas respect for life and property was generally high, Israel Lord writing in the Illinois-published *Western Christian Newspaper* in 1849 that "I think that there is less of what is ordinarily called stealing here, than in any

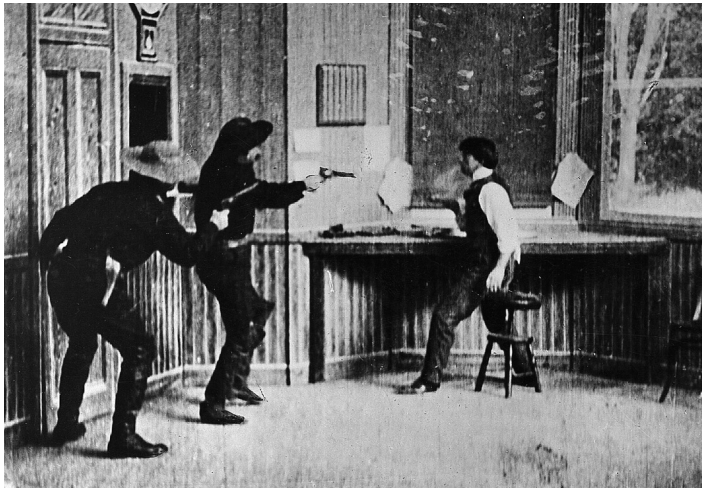


occur and involved real people, particularly those events that made headline news in the popular Eastern newspapers at the time. Naturally, they were heavily embellished and often bore only a passing relation to the truth, but that mattered little to the readership, for they were full of stirring tales of adventure, invariably involving shootouts, ambushes, stagecoach robberies, and heroic lawmen. Their names give some clue as to the level of content: The Deadwood Dick Library, DeWitt's Ten Cent Romances, The Pocket Novel, and The Detective Library among dozens of others. It is easy to dismiss them as pulp fiction but at a time when any form of printed matter was hard to obtain on the frontier, they were avidly read by thousands. The veracity of the tales was not overly questioned by an audience that was largely poorly educated and credulous. As a result, sensationalized events were taken as truthful which resulted in a great deal of exposure for Colt's revolvers, which became the archetypal "six-gun" featured in many of these works.

Writer Edward Judson (1821–86), whose pseudonym was Ned Buntline, was determined to write about these new heroes whether they wanted it or not and to his credit, he did at least make strenuous efforts to try to meet them. He allegedly presented four 16in-barreled Colt Army revolvers to the Earp brothers and as a result, the "Buntline Special" became so named, although subsequent research has never found any concrete proof that he did in fact do this. (In reality, the long-barreled revolver used by Wyatt Earp at the OK Corral, often quoted as a Buntline, was in fact a Smith & Wesson.) These works created their own heroes such as Jim Bridger, Kit Carson, and "Buffalo Bill" Cody, as well as the later lawmen and gunmen such as "Wild Bill" Hickok, the Earp Brothers, Billy the Kid, and Pat Garrett. These figures were lionized for their shooting prowess and all at some point carried Colts. Sometimes the results were unfortunate, as gunfighters like Hickok, whom the novels portrayed as unbeatable, became the target for every unhinged gunman in the West, eventually being murdered on August 2, 1876 in a saloon in Deadwood, Dakota Territory.

There is no doubt that publishing and sensational reporting added to the myth of the West, but that pales into insignificance compared to the

Cowboys fancy-shooting at Buffalo Bill's Wild West show, c.1880. (Photo by Past Pix/SSPL/Getty Images)



A scene from the very first movie about the Old West, *The Great Train Robbery* of 1903. In the movie the actor Justus D. Barnes famously pointed his .45 Colt at the audience and fired, causing people to dive to the floor in panic. (Photo by Picture Post/Getty Images)

impact that the movie screen (and latterly, television) would have on the public's perception of the Western era. The Colt became the preeminent Western handgun, featuring in over 155 movies and some 27 television series, whose genres range through Westerns, adventure, horror, fantasy, and science fiction; this undoubtedly helped Colt's struggling sales in the post-World War II era, when interest in old-fashioned revolvers was flagging.

In fact, throughout the most prolific era of Westerns, the 1950s and early 1960s, little attention was paid to exactly what was carried by the actors. If it was a handgun, then it had to be a Colt single-action, normally a Peacemaker, despite the fact that they were often to be seen in movies that were set a decade or more prior to their introduction. As interest in the genre of Western firearms grew, however, the situation began to improve, particularly due to the increasing availability of many Italian-made replica firearms in the late 1960s. This is somewhat ironic in view of the fact that the Colt factory was in decline during the same period.

In the 1970s some actors who had an interest in firearms, such as Clint Eastwood, began to go to particular lengths to ensure that the guns used were historically correct. This quest for authenticity began to ripple throughout the industry as cinematographers started to make greater efforts to get things right. To a great extent this was forced upon them by outside influences, as collector interest had begun to grow and the original guns featured in the movies were becoming extremely valuable. Selling off a few dozen genuine Colts could raise enough money to reequip a movie-production armory with an arsenal of well-made modern Italian lookalikes. Fortunately for those firearms historians and collectors who take these things seriously, this attitude toward authenticity has prevailed, to the extent that sometimes fairly rare revolvers are now featured.

Even today, Colt Army revolvers appear in the most unlikely productions, such as the science-fiction movies *Doomsday* (2008) and *Cowboys & Aliens* (2011). Nor does there seem to be an end in sight to the portrayal of the Colt as the preeminent movie handgun: in Quentin Tarantino's 2015 Western, *The Hateful Eight*, a pair of nickel-plated Colts have a leading role and other Colt single-action models have supporting roles. Doubtless they will continue to do so, as the image of the Colt is such an iconic one that most movie-researchers, all of whom have been born well after the era of classic Westerns, are still aware of them. If there was an Oscar for cinematic firearms, the single-action Colt would without a doubt be on stage making an emotional thank-you speech, which would doubtless have pleased Samuel Colt immensely.

COLT REVOLVERS SINCE 1945

With the outbreak of World War II, production of the single-action revolver ceased so that the Colt factory could concentrate on production of military-contract weapons. With the coming of peace in 1945 the Colt board felt that there was no viable demand for the resumption of manufacture of the old model, now regarded as obsolete. What they hadn't allowed for was the proliferation of cowboy movies through the 1950s, which invariably depicted characters carrying Colts and Winchesters to the exclusion of anything else. This in turn sparked new interest in the revolvers, with older models beginning to command high collector prices and a gradual rise in demand for new models that were not so expensive as to be unshootable. There has been a steady increase in the popularity of shooting these revolvers and a consequent reduction in availability of useable originals, with wear and tear on those that are still used resulting in poor accuracy and possible danger to the shooter, and the appearance in California during the 1980s of Cowboy Action Shooting

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Engraving may be had in any one of the three grades illustrated in the models shown above. The grade refers only to the amount of engraving desired, "A" representing the minimum, "B" medium grade and "C" the most ornamental. The quality of work is the same in all cases and performed by the same experts.

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A detail from a late Colt advertisement, from 1940, which still offers the single-action, despite the more popular double-action and semiautomatic pistols also on offer. (Author's Collection)



This .45-caliber Single Action Army was produced to mark Colt's 125th anniversary in 1961. (Photo by Keystone-France/Gamma-Keystone via Getty Images)

clubs and the formation of the Single Action Shooting Society. These factors increased demand and inevitably, interest in the firearms of the period.

As a result, and after a few false starts, Colt resumed production of the Single Action Army revolvers in traditional 4¾in, 5½in, and 7½in barrels, chambered for either .357 Magnum or .45 Colt cartridges. From the resumption of production in 1965 these “First Generation” revolvers were made to original specifications, with over 77,000 being manufactured. Demand continued to be strong, so in 1976 a “Second Generation” line was introduced. Production details differed very slightly from the earlier models, but in response to the increasingly popular “Cowboy Action” shooting competitions, models replicating exactly the originals were produced, these running into a third generation. Special-order models with fine finish were also offered, but in response to increasing safety requirements, Colt engineers had begun to look at a method of improving the safety of the revolvers.

In 1999 a Cowboy model was introduced that had a transfer bar safety, enabling the revolver to be carried fully loaded. Demand was lukewarm, however, Colt buyers wanting the original thing or nothing, and production ceased in 2003. Colt had already suffered a grave financial blow when in 1985 the US Government replaced the effective but aging .45-caliber Colt Model 1911 semiautomatic with the 9mm Beretta 92S. Deprived of a steady production income, the company faltered and a

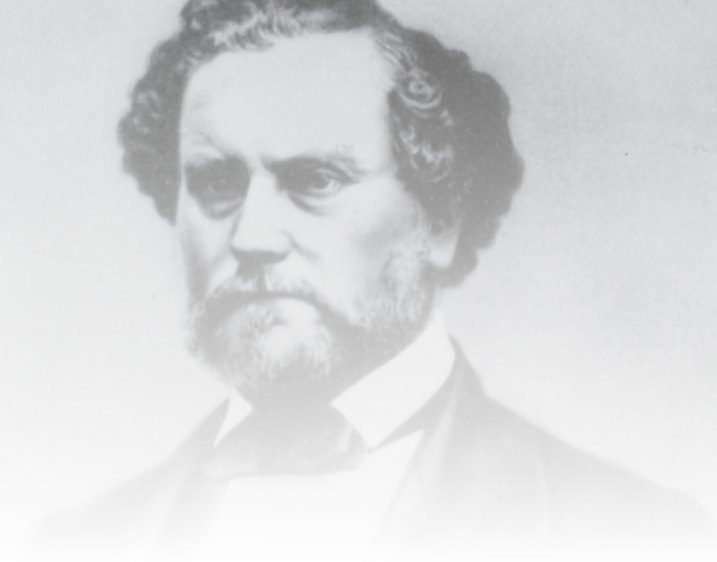


Commonly encountered Colt cartridges (L to R): .45 Long Colt, .44-40 Winchester, .41 Long Colt, .38 Winchester Centerfire, and .32.30 Colt. (Dr. Robert Maze & Dr. Laurie Landau)

disastrous strike began. As if this was not a dire enough situation, the ending of the Cold War hit every US arms manufacturer including Colt, which had been successfully producing the AR-15 military rifle since 1963, and the company filed for bankruptcy in 1992. Throughout the following years there were a series of complex reorganizations and buyouts, with Colt Defense reacquiring Colt Manufacturing in 2013, but in June 2015 Colt again filed for Chapter 11 bankruptcy protection. This did not remove the production ability from the factory, but enabled the company to reorganize while satisfying its creditors.

At the time of writing (2016), a range of single-action revolvers is once again available from the new Colt's Manufacturing Company LLC; a 7½in-barreled Army revolver costs \$1,699. For the more serious target-shooter, two modern incarnations of the "New Frontier Revolvers" with adjustable target sights are also available, in .45 Colt and .44 Special, although other calibers are available to order. As Colt's patent on the design eventually expired, very good copies are now being produced by companies such as Uberti (a Beretta subsidiary), STI International, Ruger, and the US Firearms Manufacturing Co. among others.

Much development work has been undertaken on the original cartridges, resulting in 1959 in the .454in Casull which is effectively a .45 Long Colt on steroids, producing a staggering 1,923ft lb of energy from a 240-grain bullet traveling at 1,900ft/sec. Even this is deemed insufficient these days, however, and in 2005 Smith & Wesson went to work on the long-suffering Colt cartridge and came up with the .460in Magnum. This fires a 200-grain bullet at 2,300ft/sec – about the same velocity as a rifle bullet – and generates 2,350ft lb of energy; revolvers that chamber it can also chamber and fire the .45 Colt cartridge. These massive cartridges actually generate chamber pressures the same as a .300in Weatherby Magnum rifle cartridge and the cylinders have been reduced to five chambers to provide sufficient wall thickness. They are capable of killing any North American game animal and many have been used to shoot larger African game.



CONCLUSION

To paraphrase the question, “What has Sam Colt ever done for us?” the answer is: a great deal. Without Colt’s pioneering work in production techniques the concept of mass-production would undoubtedly have taken many more years, possibly decades, to come to fruition. Moreover, his fundamental understanding of Benjamin Franklin’s axiom “Time is Money” ensured that he uniquely took what we might today call a holistic approach to manufacture. As components needed to be made as quickly and efficiently as possible by as few people as possible, Colt encouraged the creation of specialist machinery that enabled this to happen. In doing so, he rewarded his workers with high wages and far better living conditions than working men or women had ever experienced. In this respect, he gave us the modern manufacturing world.

It was Colt’s advanced use of advertising and promotion that brought his revolvers to the wider public notice. By manipulating sales through gifts, and the lobbying of those who had power and influence, he was able to obtain both sales and favourable publicity. Had he lived long enough, he would doubtless have been enthralled by the opportunities provided by modern media, particularly the advertising generated as “product placement.” Today, this is an intrinsic part of movie and television production, but Colt’s revolvers were almost certainly the first items ever to benefit from it. He also pioneered the concept of marketing before there was even a word for it, providing an entirely new dimension in the then rather naive world of advertising that has now become a worldwide, multi-billion-dollar industry. If that was not enough, he created a brand that is so wholly identified with the United States and its most eventful period of history, that more than 150 years after the introduction of the first Colts, the average person can still identify the product and also connect it to a specific time period – something that would not be possible with any other handgun.

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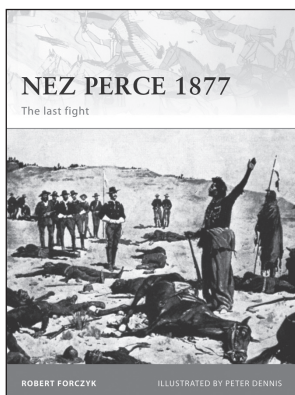
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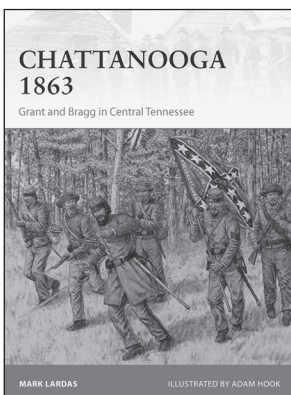
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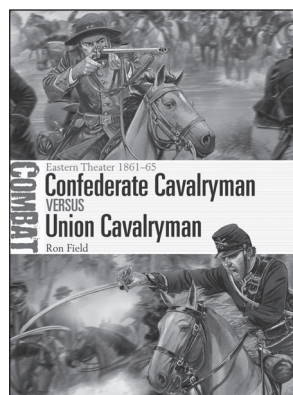
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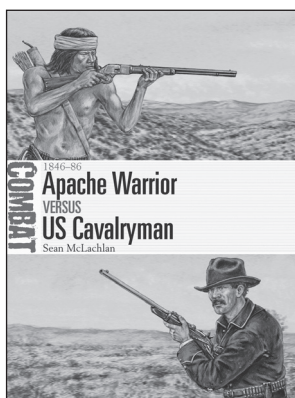
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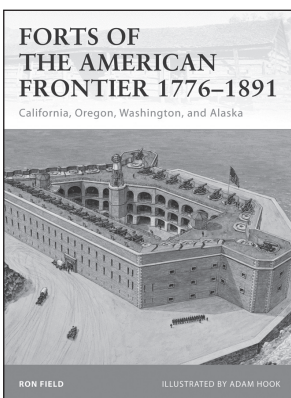
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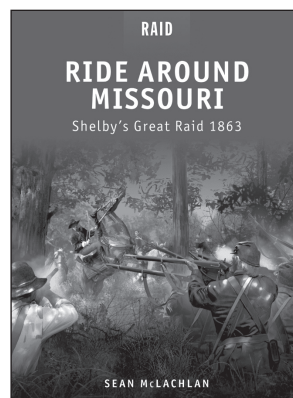
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